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Ontario, Legislative Assembly

Sessional papers

SESSIONAL PAPERS.

VOLUME XVIII.—PART VI.

THIRD SESSION OF THE FIFTH LEGISLATURE

OF THE

PROVINCE OF ONTARIO.

SESSION 1886.

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LIST OF SESSIONAL PAPERS

PRESENTED TO THE HOUSE DURING THE SESSION.

ARRANGED ALPHABETICALLY.

TITLE.	No.	REMARKS.
Accounts (*Dominion and Provinces*)	37	*Printed, in part only.*
Accounts, Public	18	*Printed.*
Agricultural College, Report	13	"
Agricultural College, Cash receipts	41	"
Agricultural College, Professor's Report	69	"
Agricultural Societies, analysis	42	*Not printed.*
Agriculture, Report of Commissioner	85	*Printed.*
Agriculture, Report of Professor	69	"
Agriculture and Arts, Report	7	"
Agriculture and Arts Association, moneys received	76	"
Asphodel and Douro, lots in	55	*Not printed.*
Asylums, Report	2	*Printed.*
Births, Marriages and Deaths, Report	9	*Printed.*
Blind Institute, Report	3	"
Borron's Report, Hudson's Bay	1	"
Brandon and Nelson, agreements	68	"
British Medical Acts, correspondence	47	*Not printed.*
Central Prison, Inquiry	26	*Printed, in part only.*
Central Prison, labour agreements	68	"
Central Prison, convicts in	73	"
College Federation	51	*Not printed.*
Collegiate Institutes, regulations	20	*Printed.*
Crown Lands, Report	33	"
Deaf and Dumb Institute, Report	4	*Printed.*
Dean, Judge, fees of	23	*Not printed.*
Dentistry Acts, correspondence	47	"
Division Courts, Report	71	*Printed.*
Division Court, commitments	82	"
Dundas and Waterloo Road	45	*Not printed.*
Education, Report	5	*Printed.*
Education, regulations	20	"
Elections Return	11	"
Elgin House of Industry, Report	22	*Not printed.*

Title.	No.	Remarks.
Elliot, Judge, fees of	23	*Not printed.*
Entomological Report	16	*Printed.*
Essex, swine plague in	59	*Not printed.*
Estimates	19	*Printed.*
Examinations of Teachers	21	"
Farmers' Institutes	29	*Not printed.*
Federation of Colleges	51	"
Franchise, exercise of	81	"
Fruit Growers', Report	6	*Printed.*
Gaols and Prisons', Report	10	*Printed.*
Government House, Title	56	"
Government Printing Contract, transfer	57	"
Halton, Temperance Act in	46	*Printed.*
Health, Board of, Report	74	"
Hope Township, indebtedness	30	*Not printed.*
Hospitals, Report	36	*Printed.*
Hurdman Brothers, timber license	53	"
Idiot Asylum, Report	2	*Printed.*
Immigration, Report	60	"
Insurance, Report	8	"
Judicature Act, Order in Council	23	*Not printed.*
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Land Security Company, Statement	27	"
Legal Offices, Report	78	*Printed.*
Librarian's Report	17	"
Ludgate John, timber license to	61	"
McArthur *vs.* the Queen, judgment	80	*Not printed.*
McCarthy, Judge, fees of	28	"
Magdalen Asylums, Report	14	*Printed.*
Marsh Lands in Walsingham	62	*Not printed.*
Massey Manufacturing Company, stock	83	"
Mechanics' Institutes, Report	5	*Printed.*
Medical and Dentists Acts, British	47	*Not printed.*
Mills, lumber allowed to	52	*Printed.*
Municipal Assets	79	*Not printed.*
Municipal Debentures	50	"
Municipal Indebtedness	32	*Printed.*
Nelson and Brandon, prison agreements	68	*Printed.*
Niagara Falls Park	77	"
Northern Colonization Road	58	*Not printed.*
Orphan Asylums, Report	14	*Printed.*

Title.	No.	Remarks.
Poor Schools, grants in aid of	49	*Not printed.*
Practical Science, Report	5	*Printed.*
Printing Contract, transfer	57	"
Prisons and Reformatories', Report	10	"
Provincial Secretary's, Report	31	"
Public Accounts	18	"
Public and High Schools, regulations	20	"
Public Service, unpaid accounts	40	"
Public Works, Report	15	"
Railway Accidents	48	*Printed.*
Railway Annuities	39	"
Railway Companies, accidents liability	48	"
Reformatories and Prisons, Report	10	"
Refuge, Houses of, Report	14	"
Registrars' Returns	38	"
Secretary and Registrar's Report	31	*Printed.*
School Buildings, plans of	25	*Not printed.*
Schools, Public, regulations	20	*Printed.*
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Statutes, disposal of	34	*Not printed.*
Swine Plague in Essex	59	"
Tavern and Shop License's Report	12	*Printed.*
Teachers' Examinations	21	"
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Toronto General Trust Company, statement	24	*Printed.*
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Toronto University, Report	35	*Not printed.*
Toronto University, cash transactions	43	*Printed.*
Toronto University, Minutes of Senate down to 1880	54	"
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Toronto University, rules	84	*Not printed.*
Townley Estates	75	"
University College, Report	5	*Printed.*
University College, Officers of	66	"
University College Students	70	*Not printed.*
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Upper Canada College, Report	5	*Printed.*
Upper Canada College, cash transactions	44	"
Upper Canada College, attendance	67	"
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Walsingham, marsh lands in	62	*Not printed.*
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Widows, etc., as Voters at Municipal Elections	81	*Not printed.*

SESSIONAL PAPERS.

ARRANGED NUMERICALLY.

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No. 1.. Report of E. B. Borron, Stipendiary Magistrate, on part of the Basin of Hudson's Bay, belonging to the Province of Ontario. (*Printed.*)

No. 2.. Report of the Inspector of Prisons and Public Charities on the Asylums for the Insane and the Asylums for Idiots of the Province, for the year ending 30th September, 1885. (*Printed.*)

No. 3.. Report of the Inspector of Prisons and Public Charities upon the Institution for the Education and Instruction of the Blind, Brantford, for the year ending 30th September, 1885. (*Printed.*)

No. 4.. Report of the Inspector of Prisons and Public Charities upon the Institution for the Education and Instruction of the Deaf and Dumb, Belleville, for the year ending 30th September, 1885. (*Printed.*)

No. 5... Report of the Minister of Education, of Ontario, for the year 1885, with the statistics of 1884, in which Report is included the Reports upon Mechanics' Institutes; the School of Practical Science; University College, Toronto; and Upper Canada College. (*Printed.*)

CONTENTS OF PART II.

No. 6.. Report of the Fruit Growers' Association, of Ontario, for the year 1884. (*Printed.*)

No. 7.. Report of the Council of the Agricultural and Arts Association, of Ontario, for the year 1885. (*Printed.*)

No. 8.. Detailed Report of the Inspector of Insurance, 1885, to which is appended the Insurance Amendment Acts, 1885. (*Printed.*)

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No. 9.. Report relating to the Registration of Births, Marriages and Deaths for 1885. (*Printed.*)

No. 10.. Report of the Inspector of Prisons and Public Charities upon the Common Gaols, Prisons and Reformatories of the Province, for the year ending 30th September, 1885. (*Printed.*)

No. 12.. Return from the Records of the Elections to the Legislative Assembly since the last Return in 1885, shewing:—(1) The number of votes polled for each candidate in each Electoral District in which there was a contest. (2) The majority whereby each successful candidate was returned. (3) The total number of votes polled in each District. (4) The number of votes remaining unpolled. (5) The number of names on the Voters' Lists in each District. (6) The population of each District as shewn by the last census. (*Printed.*)

No. 12.. Report of the Provincial Secretary on the working of the Tavern and Shop License Acts, for the year 1885. (*Printed.*)

No. 13.. Report of the Ontario Agricultural College and Experimental Farm for the year 1885. (*Printed.*)

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No. 14.. Report of the Inspector of Prisons and Public Charities upon the Houses of Refuge and Orphan and Magdalen Asylums, aided by the Province of Ontario, for the year 1885. (*Printed.*)

No. 15.. Report of the Commissioner of Public Works for the Province for 1885. (*Printed.*)

No. 16.. Report of the Entomological Society for 1885. (*Printed.*)

No. 17.. Report of the Librarian of the Legislative Assembly on the state of the Library. (*Printed.*)

No. 18.. Public Accounts for the Province for 1885. (*Printed.*)

No. 19. Estimates for the year 1886. (*Printed.*)

No. 20.. Regulations of the Education Department respecting Public and High Schools, and Collegiate Institutes, approved August 25th, 1885, as required by 48 Vic., cap. 49, sec. 7. (*Printed for distribution to Members only.*)

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No. 21.. Return of copies of all correspondence between the Minister of Education and the University of Toronto, or any other University, relating to the holding of Examinations of Teachers and Matriculants, at the same time and place, and under the same Examiners, and also for copies of any Orders or Regulations of the Minister or Department of Education, and of the Statute or By-law of any University or Universities adopting or establishing such system of simultaneous co-examinations. (*Printed.*)

No. 22.. Report of the Inspector of the Elgin House of Industry and Refuge for the year ending 31st October, 1885, as required by Sec. 460 of the Municipal Act. (*Not printed.*)

No. 23.. Copies of Orders in Council under the 81st section of the Judicature Act, increasing commutation of His Honour Judge Elliott, of Middlesex, from $925 to $1,000, and commuting fees of His Honour Judge Dean as Local Master at Lindsay. (*Not printed.*)

No. 24.. Statements and Returns of the Toronto General Trust Company for 1885. (*Printed.*)

No. 25... Return shewing what, if any, plans of school buildings, of various kinds, have ever been prepared by direction of the Education Department for adoption by school boards, and also shewing how far, if at all, any systems of lighting, heating, ventilating and draining have been approved of by the Department, or recommended for general adoption. (*Not printed.*)

No. 26.. Report of the Royal Commission appointed to inquire into certain charges preferred against the Warden of the Central Prison, and into the management of the said Central Prison, together with Supplementary Papers and documents with the evidence taken before the Royal Commission. (*Printed in part only.*)

No. 27.. Statement of affairs of the Land Security Company for the year 1885. (*Not printed.*)

No. 28.. Copy of an Order in Council commuting the fees payable to His Honour Judge McCarthy, under the 31st section of the Judicature Act. (*Not printed.*)

No. 29.. Return of the number of Farmers' Institutes formed in the several Ridings of the Province, together with the number of lectures delivered in connection with the Institutes by the Professors of the Agricultural College. (*Not printed.*)

No. 30.. Return shewing the amount due the Township of Hope to the Municipal Loan Fund with the interest on the same, together with a copy of the agreement entered into by the Provincial Treasurer and the Municipality of Hope for the payment of the debt. (*Not printed.*)

No. 31.. Report of the Secretary and Registrar of the Province for 1885. (*Printed.*)

No. 32.. Return shewing the indebtedness of any Municipality to the Government whenever the same may be in arrears for over one year, either on account of principal or interest. (*Printed.*)

No. 33.. Report of the Commissioner of Crown Lands for 1885. (*Printed.*)

No. 34.. Return from the Queen's Printer as to the disposal of the Statutes for 1885. (*Not printed.*)

No. 35.. Report of the University of Toronto for 1884–5. (*Not printed.*) *See No. 5.*

No. 36.. Report of the Inspector of Prisons and Public Charities upon the Hospitals of the Province. (*Printed.*)

No. 37.. Return of all correspondence, subsequent to that already brought down, between the Government of Ontario or any member or officer thereof, and the authorities of the Dominion of Canada or of the Province of Quebec, respecting the settlement of account between the Provinces and the Dominion; also, for a statement up to the 1st day of January, 1886, of the amounts which the respective municipalities interested, should receive as interest from the Land Improvement Fund in connection with School Lands. (*Printed in part only.*)

No. 38.. Statement of the Returns forwarded to the Office of the Provincial Secretary of all the Fees and Emoluments received by the Registrars of Ontario, for the year 1885, made in accordance with the provisions of the R. S. O., cap. 111., sec. 97, and 43 Vic., cap. 3, sec. 2, with which are contrasted Receipts of same nature in 1883 and 1884. (*Printed.*)

No. 39.. Return shewing the number of certificates of Railway Annuities and the amounts of the same, which have been either sold or exchanged for any portion of the outstanding Railway Scrip during the year 1885, as authorized under the provisions of Cap. 31, 47 Vic., to whom sold, or with whom exchanged; the terms upon which such sale or exchange was effected, and when sold; the date of the receipt of the money therefor. Also, a copy of the advertisement asking for tenders, with copies of all tenders received in response thereto. (*Printed.*)

No. 40.. Return shewing the amounts payable in respect of any branch of the Public Service, as far as ascertained, on the 1st January, 1886, and not then paid. The same to be classified under the same head as the expenditures for the year are so classified in the Public Accounts. (*Printed.*)

No. 41.. Return giving the following information with regard to the Ontario Agricultural College and Farm, namely:—1st. The cash receipts in each of the years 1882, 1883 and 1884, from each of the following sources, viz.: (*a*) From sales of stock by auction in 1881, 1882, 1883 and 1884, distinguishing the amounts received on account of each year's sales, with the amounts (if any) still to be collected on account of each, when the accounts as published in the Public Accounts of 1884 were closed; (*b*) From sales (made otherwise than by auction) of stock fed (experimentally or otherwise) for the butcher, with the number of each kind so disposed of; (*c*) From sales of horses, cattle, sheep, pigs and dogs not included in either of the preceding statements, with the numbers of each; (*d*) From sales of wheat, barley, peas, oats, garden and orchard produce and sundries. 2nd. A statement of the several amounts due for board, tuition fees, stock and produce, etc., when the accounts, as published in the Public Accounts of 1884, were closed. 3rd. A statement of the number of horses, cattle, sheep, pigs and dogs which either died or were destroyed during each of the years 1882, 1883 and 1884. 4th. A statement showing for each of the years 1882, 1883 and 1884—(*a*) The number of horses purchased and the amounts paid therefor; (*b*) the number and cost of cows and heifers (with the ages of the latter at time of purchase), other than those imported during the year 1884, purchased for milking and breeding purposes—distinguishing between "thoroughbreds" and "grades"; (*c*) the number and cost of steers and heifers purchased for either or both fattening and experimental purposes, with the date of delivery of each animal, and its weight and age at time of delivery; (*d*) the number and cost of sheep bought for breeding (exclusive of the importation of 1884) and fattening purposes respectively, distinguishing between "pure breds" and "grades"; (*e*) the number and cost of pigs (exclusive of 1884's importations) purchased for breeding and fattening purposes respectively; (*f*) the number and cost of the dogs purchased, with a statement of the amounts paid, and to whom paid, for feeding and taking care of the same. 5th. A statement of all outstanding claims (so far as can be ascertained up to the time of making this Return) against the Institution at the time the accounts, as published in the Public Accounts for 1884, were closed, distinguishing, as far as possible, between those chargeable against the Teaching Department, the Boarding Houses, the Farm and the

Creamery. 6th. A statement of the quantity and value of all grain (distinguishing between wheat and other grains), hay, straw, roots, ensilage, other food for stock and wool on hand on the 1st January, 1885. 7th. A statement shewing the number of cows, ewes and sows kept on the Farm for breeding purposes during each of the years 1882, 1883 and 1884, with the numbers of their progeny in each year, and a statement of the numbers of each retained on the Farm and disposed of during the year of their birth. (*Printed.*)

No. 42.. Analysis of Reports of County and Township Agricultural Societies, and of Horticultural Societies, in accordance with the provisions of sections 47 and 48, cap. 35, R. S. O. (*Not printed.*)

No. 43.. Bursar's Statement of Cash Transactions of the University of Toronto for the twelve months ending 30th June, 1885. (*Printed.*)

No. 44.. Bursar's Statement of Cash Transactions of Upper Canada College for the twelve months ending 30th June, 1885. (*Printed.*)

No. 45.. Return of copies of any correspondence which may have taken place between the Ontario and Dominion Governments, or between the former and any Corporation or persons, relating to the ownership, sale or lease of the Dundas and Waterloo macadamized road, together with copies of any papers in the possession of the Government relating thereto. (*Not printed.*)

No. 46.. Return of the cost of enforcing the Canada Temperance Act in the County of Halton for the years 1882-3-4, with statement of the receipts shewing how much was paid by the Province, by the County Council, and the amount recovered from fines and Druggist Licenses. Also, a statement of the expenditure shewing the sum paid to the Police Magistrate for his salary and expenses; the sum paid to the License Inspectors for their salaries and expenses; the amounts paid to the Boards of License Commissioners for their fees and expenses, and any other expenses that have been paid. The number of convictions that have been quashed; by what court; for what cause; the amount of costs in each case, and by whom paid. (*Printed.*)

No. 47.. Correspondence, Despatches, Orders-in-Council, and Report of the Honourable the Attorney-General with reference to the British Medical Acts, 1858 and 1868, and the Dentists' Act, 1878. (*Not printed.*)

No. 48.. Return of payments or decisions in any Division of the High Court of Justice, as to the liability of Railway Companies for accidents to workmen, where the Company has failed to comply with the provisions of the Railway Accidents Act, 1881, and the accidents have happened by reason of such non-compliance. (*Printed.*)

No. 49.. Statement of Government Grants in aid of Poor Schools for the year 1885. (*Not printed.*)

No. 50 . Statement of the Returns for the year 1885 of the debentures issued by the undermentioned Municipalities forwarded to the office of the Provincial Secretary, as required by cap. 176 R. S. O., respecting the Registration of Municipal and other Debentures. (*Not printed.*)

No. 51.. Return of copies of any correspondence between the Minister of Education or any other member of the Government, and the authorities of any of the

Universities or Colleges of the Province, respecting a proposed Federation of Colleges referred to by His Honour the Lieutenant-Governor, in his Speech at the opening of the Legislature, on the 28th of January, 1885. (*Not printed.*)

No. 52.. Return shewing the local mills east of the Bobcaygeon Road, to which lumber has been allowed under the local mill regulations, the quantity allowed to each mill *per* year, the license from which it has been directed to be taken, and all Orders in Council and regulations in connection therewith. (*Printed.*)

No. 53.. Return of a copy of the petition of William Hurdman and Brothers, of the fourth of August, 1873, addressed to the Commissioner of Crown Lands for Ontario, praying (among other things) that a license might be issued to them as the assignee of one Richard McConnell for the vacant space between the licenses granted on the Amable du Fond and those granted on the Amable du Fond branch of the Petewawa, and of all correspondence to or from the Commissioner of Crown Lands, or any officer in the Crown Lands Department relating thereto; also, of all reports made and of all Orders in Council passed with reference thereto; also, of all assignments of the claim set up in the petition, and of all licenses issued in recognition of such claim, to whom issued, the area covered and the amount paid (if any) on account of ground rent accruing previous to the first issue of such license, and the amount (if any) allowed to Messrs. Hurdman and Brothers, or their assignee, as compensation or in rebate of the double dues charged them for cutting timber thereon without proper authority. (*Printed.*)

No. 54.. Return containing Minutes of the Senate of the University of Toronto from date of last Return down to 1880. (*Printed.*)

No. 55.. Return giving the following information with regard to all lots or parts of lots in the Townships of Asphodel, Douro and Otonabee, in the County of Peterborough, the arrearages on account of which have been reduced or remitted since the 1st of January, 1881, namely: the year in which such lot or part of lot was sold, with acreage, price and terms of payment; the amounts paid thereon, distinguishing between principal and interest, the date of reduction, with amounts then due for principal and interest under original contract, the amount to which the claim of the Province was reduced, and the terms of payment of such reduced amount with copies of the valuations, recommendations or other data upon which such reductions were made. (*Not printed.*)

No. 56.. Return shewing the title of the Province of Ontario to that parcel of land on the West side of Simcoe Street between King and Wellington Streets, in the City of Toronto, known as Government House. Also, copies of all Orders in Council accepting such Title, and all Title Deeds and Documents affecting the Title. (*Printed.*)

No. 57.. Copy of an Order in Council and of other documents relating to the assignment of the Contract for the Government Printing from the "Grip" Printing and Publishing Company to Messieurs Warwick & Sons. (*Printed.*)

No. 58.. Return shewing the amount expended on the Northern Colonization Road, in the Township of Gladstone, since the year 1881, giving the details of the expenditure in each year, the persons to whom moneys were paid and for

what purposes, and also a return giving the like particulars of the expenditure upon the Bridge over the Mississaga River in the same Township. (*Not printed.*)

No. 59.. Return of copies of all correspondence between the Minister of Agriculture and any persons in regard to the outbreak of Swine Plague in the County of Essex; a copy of the Report of Professor Greenside in regard thereto. Also, all correspondence with the Department of Agriculture at Ottawa, or with any other persons in regard to the outbreak of the disease in said County, or elsewhere in the Province. (*Not printed.*)

No. 60.. Report of the Department of Immigration for the Province for the year 1885. (*Printed.*)

No. 61.. Return shewing the number, concession and acreage of the lots in the Township of Livingstone, placed under license to cut timber, to John Ludgate, in August, 1884: the township, number, concession and acreage of the lots in lieu of which the license of 1884 was issued; the date when the last named lots were taken out of Ludgate's license, and the disposition made of the timber thereon, with copies of all correspondence, reports and Orders in Council, relating to the exchange of territory thus affected. (*Printed.*)

No. 62.. Return shewing in detail all lands, known as Marsh Lands, sold in the front of the Township of Walsingham; to whom sold; to whom patents have been issued, and the number of acres in each case. (*Not printed.*)

No. 63.. Copy of an Order in Council commuting the fees received by His Honour Judge Lacourse, Junior Judge of the County Court of the County of Waterloo, as Local Master of the Supreme Court of Judicature for Ontario, at Berlin, approved by his Honour the Lieutenant-Governor on the 19th day of March, A.D. 1886. (*Not printed.*)

No. 64.. Report of the Master of Titles. (*Printed.*)

No. 65.. Return shewing how many persons have, up to the end of 1885, applied under the Land Titles Act of 1885 to the Master of Titles to be registered under the said Act, or to have any nominee registered in his stead, and shewing also the cost of each such application; the number of certificates granted; the date of each application and the date of each certificate. (*Not printed.*)

No. 66.. Return giving the names and salaries of the officers of the University of Toronto at the date of the Order. Also, the names and salaries of the Professors, Tutors, Fellows and Officers of University College at the same date, specifying in each case the subject taught or the office held, and giving the amount of remuneration for each where more duties than one are discharged by the same person. (*Printed.*)

No. 67.. Return shewing the average yearly attendance of pupils in Upper Canada College, since the date of the last return, down to and inclusive of the year 1885, distinguishing between resident and day pupils in each year, and giving the localities from which they came. Also, the conditions at present in force respecting entrance into the College, including especially the minimum age of the pupils and the curriculum on which the Entrance Examination is conducted. (*Printed.*)

No. 68.. Agreement between the Inspector of Prisons and Public Charities and H. A. Nelson & Sons, relative to the manufacture of Brooms at the Central Prison. Also, Agreement between the Inspector of Prisons and Public Charities and C. T. Brandon & Co., relative to the employment of certain prisoners in the Central Prison in the manufacture of Wooden Ware. Also, Agreement between C. T. Brandon & Co., the Brandon Manufacturing Company, of Toronto (Limited), and the Inspector of Prisons and Public Charities, assigning the Agreement made between the Inspector of Prisons and Public Charities and C. T. Brandon & Co. to the Brandon Manufacturing Company, of Toronto (Limited). (*Printed.*)

No. 69.. Report of the Professor of Agriculture, Farm Manager and Experimental Superintendent, at the Agricultural College and Farm. (*Printed.*)

No. 70.. Return shewing the total number of students attending lectures in University College during the academic year 1884-85, and each of the preceding four years; the total number of students in residence during each of the same five years; the total receipts on account of board, lodging and other residence dues in each year, and a detailed statement of the disbursements on account of residence, including salaries, repairs, water, fuel, light, and steward's department in each year. (*Not printed.*)

No. 71.. Report of the Inspector of Division Courts for the Province for the year ending 31st December, 1885. (*Printed.*)

No. 72.. Return shewing the arrangement, if any, made under Rule 521 of the Supreme Court, with the Toronto General Trust Company, or otherwise, and the amount of money lent to and loaned out by the Company thereunder, stating amounts and rates of interest. (*Printed.*)

No. 73.. Return shewing the number of convicts confined in the Central Prison, and now employed at work which competes with the work of other citizens of the Province; the kind of work, the number employed at each kind of work, and the amount received *per diem* by the Government for each convict so employed. (*Printed.*)

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No. 74.. Report of the Provincial Board of Health. (*Printed.*)

No. 75.. Return of copies of all correspondence between the Government of Canada and the Government of Ontario, and of all Orders in Council, and other papers relative to the alleged proceedings of persons in Canada and the United States, with respect to claims on the Townley or Lawrence Townley Estates in England. (*Not printed.*)

No. 76.. Return shewing for each of the years 1883, 1884 and 1885, all sums of money received by the Agricultural and Arts Association, the amount expended in prizes at the annual exhibitions, cost of management of said exhibitions, distinguishing between salaries and other disbursements; salaries paid officials of said association; all other disbursements made by the said association; balance sheet for each year's transactions, shewing profit or loss, as the case may be. (*Printed.*)

No. 77.. Papers relating to the Niagara Falls Park. (*Printed.*)

No. 78.. Report of the Inspector of Legal Offices for the year 1885. (*Printed.*)

No. 79.. Statement of the Assets, Liabilities, Revenue, etc., of the Municipalities within the several Counties in the Province for the year 1884. (*Not printed.*)

No. 80.. Return of copies of the judgment given by the Honourable Mr. Justice Proudfoot in the case of McArthur *v.* the Queen, and of the pleadings and evidence in the case, and all correspondence and Orders in Council relating to the claim of Peter Alexander McArthur, or any other person, to the timber limit in question in the case, together with an estimate of the value of the limit. (*Not printed.*)

No. 81.. Return shewing the number of Men, Widows, and Unmarried Women who availed themselves of the Franchise at the Municipal Elections of 1885–6, together with the total number of Male and Female voters respectively on the Voters' Lists of each Municipality in the Province. (*Not printed.*)

No. 82.. Return shewing the number of persons in each County committed to gaol by the County Court Judges during the years 1884 and 1885, for default of payment under an order of the Division Court. (*Printed.*)

No. 83.. Return of copies of all letters and correspondence between any and all members or officers of the Government of Ontario, and any party or parties interested in the capital stock of the Massey Manufacturing Company, or the contemplated increase thereof, in reference to such proposed increase. (*Not printed.*)

No. 84.. Return of copies of all rules and regulations in force at the University of Toronto, with regard to the admission of visitors to the Library, Museum and Tower. (*Not printed.*)

No. 85.. Report of the Commissioner of Agriculture, for the Province, for the year 1885. (*Printed.*)

No. 86.. Copy of the Statute of the Western University, establishing a Faculty of Law in connection with the University, a copy of the Order in Council disallowing the said Statute, and of all reports upon which the Order in Council was based, and copies of all correspondence between the Minister of Education or any member of the Government, or any Departmental officer, and any other person in reference to the establishment of the Faculty, or the disallowance of the Statute, and a copy of the Statute of the said University establishing a Faculty of Medicine in connection with the said University, and of all Orders in Council in reference thereto. (*Printed.*)

No. 87.. Return giving a statement of all payments made on account of the compiling, preparation or publication of the Ontario Readers, up to and inclusive of the Fourth Book, subsequent to that already brought down. Also, copies of all advertisements or circulars inviting tenders for the privilege of publishing the said Fifth Reader, with copy of agreement entered into and all correspondence relating to the same. A copy of any agreement entered into for the publication of the drawing books, and the name of the person or firm in whom the copyright is vested, together with all correspondence relating thereto The names of all text books authorized or in course of preparation, and intended to be authorized, or which have been in course of preparation with a view to authorization—subsequent to the list already brought down, with the names of the text books which they

have superseded or are intended to supersede. A statement of all payments made for compiling, preparing, or publishing each of the said books respectively, and all correspondence relating to the same, and a statement of the subjects in which it has been decided to authorize new text books, and of the persons engaged in the preparation of them. (*Printed.*)

FOURTH ANNUAL REPORT

OF THE

PROVINCIAL BOARD OF HEALTH

OF ONTARIO,

BEING FOR THE YEAR 1885.

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FOURTH ANNUAL REPORT

OF THE

PROVINCIAL BOARD OF HEALTH.

To His Honour, the Honourable JOHN BEVERLEY ROBINSON,

Lieutenant-Governor of the Province of Ontario:

May it Please Your Honour:

The Provincial Board of Health begs leave to present this, its Fourth Annual Report. The Appendices following the Report will be found to contain reports and investigations on the following subjects, presented to the Board during the year 1885, relative to the public health:

1. Summary of Minutes of Meetings of the Board.
2. The Chairman's Annual Address.
3. Report of the Committee on Poisons and Chemicals—Dr. Rae.
4. Report of the Committee on Sewerage and Water Supply, *re* the London Sewerage Investigation—Dr. Oldright and Professor Galbraith.
5. Report of the Committee on Epidemics—Dr. Covernton and Dr. Bryce.
6. Report of the Committee on Sewerage and Water Supply, *re* the Sewerage of Kingston Asylum—Dr. Oldright and Dr. Rae.
7. Report of the Committee on Epidemics regarding the question of a Vaccine Farm—Dr. Covernton and Dr. Bryce.
8. Report of a Special Committee to discuss means for lessening Infant Mortality. —Dr. J. J. Cassidy.
9. Special Report on the Sewerage System of the Town of Woodstock—Professor Galbraith.
10. Special Report on Maritime and Land Sanitation—The Chairman.
11. Special Report on the Inspection of Cemeteries—The Secretary.
12. Epitome of Reports of Local Boards of Health—The Secretary.

A large part of the proceedings of the Board during the year has consisted in the superintendence of the work of the numerous Local Health Boards established within the last two years, extensive correspondence with their members and Medical Health Officers, and investigations into the causes of and suggestion of modes of procedure for arresting the progress of epidemic disease. These inquiries made by committees appointed by the Provincial Board, and reports of places visited by the Secretary of the Board on occasions of complaint of non-removal by Local Boards of nuisances calculated to be prejudicial to the health of the inhabitants, will be found in full or referred to in different pages of the Report. Inquiries into manufactures, cheese factories and other branches of industry which tend to produce nuisance by offensive pollution of streams by excreta, saw dust, etc., etc., were included in these. Early in September the epidemic of smallpox in Montreal and the Province of Quebec had assumed such serious proportions, that with the sanction of the Government, a staff of medical men were sent down to accompany all trains leaving that

city for the west to enforce vaccination in transit, or deal with recalitrants on the frontier of the Province of Ontario by either sending them back to Montreal or detaining them until better judgment was arrived at. Of this work and of other duties connected with their mission, a full report will be found in the Secretary's Report. In respect to the cognizance which our Board has taken of Land and Maritime sanitation, particulars will be found in Appendix X. The real work attempted to be accomplished in the past year has been that of practical sanitation, enquiry into sewerage, drainage and all other subjects directly concerned in the advancement of the cause of Preventive Medicine. Due attention has been given to the inculcation of proper ventilation of buildings, public and private, to drainage and disposal of sewage, to destruction of refuse matter, to purity of water supply and the requisite attention to the dangers underlying unscientific or careless systems of plumbing. The Public Vaccination Act that for so many years has, although in very many of its provisions well conceived, proved, though useful in many cases, nevertheless inoperative on the whole, will, we trust, be replaced at the present session of the Legislature by one that has been drafted by the Board, and has been submitted to the Government as better fulfilling the wants that recent epidemics of smallpox have so clearly demonstrated, Dr Ogle's supplement to the Forty-Fifth Annual Report of the Registrar-General shows that the diminished mortality of children from smallpox coincides with the enforcement of vaccination, a great fall in the deaths caused by it in the first age period, and a rise increasing with the advance of age in the later periods proving that its protective influence, after a certain lapse of time, gradually dies out and requires renovation. This matter is fully discussed in the Report *re* the Vaccine Farm. Re-vaccination, then, after seven years should be universally inculcated. Further abstract of the work of the board is obtained from the following brief notices of some of the most important Reports :

The Report of Dr. Rae will be found to have reference to the measures to be taken in accidental or intentional cases of poisoning, until a medical man can be summoned.

The Report on the London Sewage investigation embraces the examination of the Thames Valley as regards its sanitary condition due to occasional overflow, the pollution of the river by sewage of London and other places, and plans suggestive for the correction of the evils by removal of dams and construction of a trunk sewer.

The Report on Epidemics deals with the absolute necessity for Interstate, Interprovincial and European International Marine and Land Sanitation for checking the communication and spread of epidemic diseases. Measures of co-operation for guarding against the introduction of contagious diseases to this continent have in a great measure been derived from the discussions at the 12th Annual Meeting of the American Public Health Association, convened at St. Louis in October, 1884, and at the adjourned meeting of the States Boards of Health at Washington, D.C., December of the same year, and at the meeting of both these societies at Washington, December, 1885, as also from the report of Dr. Blaxall to the Local Government Board of England.

The Report on the Kingston Asylum was made at the request of the Department of Public Institutions in consequence of the endemic presence in the asylum of adynamic fever. Many radical defects in the system of sewers were discovered by the commission, and plans for improving defects will be found set forth at length in this report.

The Report on the advisability of taking precautions to prevent infanticide in this Province, and also for suggesting the best means by which the present large mortality among the foundlings of this Province may be diminished will be found of much value.

The Report of the committee on the sewerage investigation of the town of Woodstock includes reference to site, and facilities for a system of sewerage, gives details of existing sewers and their defects, and suggests methods for improving and extending the system.

The Report on a Vaccine Farm includes information given on this subject which has resulted from the great apprehension in the minds of the public that sufficient care and precaution have not always been observed in enquiring into the source from which the vaccine virus was obtained. In the opinion of the Board such fears on the subject would be best allayed by having a vaccine farm for the Province, under Government and Provincial Board Inspection.

REPORT OF THE SECRETARY.

To the Chairman and Members of the Provincial Board of Health.

GENTLEMEN,—On presenting for your consideration a report of the work of the Board for 1885, as far as has been included within my duties as Secretary, it will be proper for me to recall to your notice much that has already been presented for your consideration, and to make such additions thereto from what has belonged, either to the ordinary routine duties of the office work, or has been performed of executive functions in making investigations into outbreaks of disease, examining into the causes of nuisances and the best methods for their abatement, and in taking steps for limiting and suppressing epidemics of smallpox, and other zymotics. Both for convenience of reference and facility of explanation and clear illustration, I propose to present the various matters to be referred to in successive paragraphs, having rather relationships as regards subjects treated of, than any chronological consecutiveness: but the order of time, whenever advantageous and convenient, may be expected to be followed.

Never since its organization has the Board seen the new year begin with a dawn so ominous of coming evil, and its rising sun so obscured with dark and gloomy clouds as did 1885. America had escaped cholera in 1884, but its European progress had caused all the people of the American continent to dread the advent of 1885, with its hot season which must certainly come, while in our own Province an outbreak of smallpox, which at that time had spread over one township, and had extended into several neighbouring ones, was being fought with no certain knowledge as to how far its ravages might extend before the disease could be arrested. Officers and sanitary police were acting under my directions in Hungerford, and Mr. Hawley had that day gone to Seymour Township to aid in organizing measures for limiting the disease to first cases there. With marked success, the local organizations, encouraged and directed by this Board in these townships of Hastings, Addington and Northumberland, were completed, and outbreak after outbreak, which early had spread from the Hungerford centre was quickly stamped out. The last case, as far as known, which occurred in the Province from this centre was in Prince Edward County. From the Hungerford centre it unfortunately happened that by means of a horse-dealer, who had been in some unknown way exposed, the disease was carried to Winnipeg. He further, on his way thither, as is explained in the following statement taken from *Public Health*, caused a serious outbreak in Minnesota.

The following is taken from the Minnesota *Public Health* for May:—

"It was noticed that he broke out on a St. Paul, Minneapolis & Manitoba Railroad stock train at Minnesota Junction, but the disease was not recognized till his arrival in Winnipeg. A lumberman rode on the same train a few miles, and stopped at Crookston. He went to work at Walker's camp, seventy miles from there, and was taken sick on April 5th. As usual, the disease was supposed to be measles. He was discharged and sent back to Crookston, stopping overnight at Fosston, where he left the infection; rode into Crookston with two young men and infected them; went to an hotel, infected that, and on suspicion was reported to Health Officer, Dr. Dampier, who had him put in the pest-house for varioloid; and the result showed the wisdom of this action. The two young men infected a younger brother who was attending school with discrete variola. Steps were promptly taken by Dr. Dampier, and, up to June 1st, two cases in the affected family are the only result. Prompt and thorough vaccination of all exposed, and of all school children was at once adopted, and all danger *from persons* in the city of Crookston is at an end. The first notice from the camps, sent to the State Board, was a telegram on April 29th for a physician. Knowing of the case caught at Crookston (whose history was not yet discovered), the Secretary went to Minneapolis, and sent Dr. Brown to the camps, believing that the Crookston case came from there, and so it proved. By prompt isolation, vaccination, and disinfection, he confined the disease to five cases, including two cases which had escaped and could not be traced. Fortunately for the lumbermen, nearly all had been vaccinated two years before by the advice of the State Board, and a large

portion of the population of Crookston were protected in the same way at that time. Up to date, from this single case of mild varioloid, twenty-four persons (in centres separated about seventy, fifty, and thirty miles apart), have received the infection of smallpox."

As the details of the various offshoots from Hungerford have been already referred to in my special report to the Hon. A M. Ross on the Hungerford outbreak, excepting that in Prince Edward County, I here need refer only to the latter.

A case of smallpox was reported to me on April 19th, 1885, by the Clerk of the Township of Hallowell, in Prince Edward County, the case having been reported to him (the Clerk) on April 16th, by the physician in attendance. The infected premises had been at once placarded, and a man placed on guard so as to secure complete isolation of the patient. The people were caused to be vaccinated. In fact everything was done to prevent the spread of the disease.

The Clerk of the Township of North Fredericksburgh on April 17th, 1885, reported to the Secretary that a case of smallpox existed in the Township of Adolphustown. The Clerk of Adolphustown, when written to on the subject, replied on April 22nd that there was a case of smallpox in his municipality, and that the patient was being successfully treated by the doctor in attendance.

These cases occurred contemporaneously with cases in Ottawa, referred to by Dr. Robillard in the following terms :—On April 6th he was informed of smallpox existing in a boarding house, having eleven occupants, on Rideau Street, and on investigation such proved to be the case. The parties were at once sent to the smallpox hospital, and the house, clothing and bedding properly disinfected. All the inmates of the house who were previously vaccinated escaped the disease, and those, with the exception of one child, that had not before been vaccinated, took the disease. There were five cases of smallpox, all originating in this house the same week, and developing after longer or shorter periods of incubation; and two deaths, one occurring forty-eight hours after admission to hospital, the other, eleven days after admission. The Medical Health Officer's theory as to the probable origin of the disease is, that two weeks previous to the first case, two men boarders (ranchers) stopped at this house for about a week, and may have brought the infection. The Medical Health Officer reported, on June 18th, that Ottawa was free from smallpox.

From Dr. Robillard's statement made in the preceding section it will be seen that the Province could be declared free on June 18th from a single case of smallpox. But this satisfactory state of affairs was not long to continue, since an outbreak of smallpox in the City of Montreal, referred to in a letter from Mr. R. Gray, Chairman Montreal Board of Health, dated April 23rd, had increased till, in the month of June, 22 deaths were recorded as having occurred within the city limits, while a number more had taken place in the suburbs. Without referring to the discussions which have taken place regarding the first case in Montreal and the occurrences which led to the spread of the disease, it need only be said here that the opposition of a section of the population of Montreal to vaccination, and the existing sentiment amongst them that smallpox was like measles, a something which had to be *taken and got over with*, made the health authorities reluctant to resort to coercive measures for the suppression of the disease; and hence it happened that the only known methods for stamping out the disease, viz.: vaccination, isolation and disinfection, were either wholly neglected or but imperfectly carried out. A knowledge of the existence of the disease in Montreal, with some further idea gathered from my Hungerford experience of the French amongst its population, caused me to fear that smallpox might extend to this Province from Quebec; and hence it was that at the May meeting of the Board, a report was presented from your Committee on Epidemics, advocating the establishment by the Government of a Vaccine Farm. In conjunction with this the advocacy of general vaccination by municipalities was sought by the following circular addressed to every municipality in the Province :—

OFFICE, PROVINCIAL BOARD OF HEALTH,
TORONTO, May 16th, 1885.

To the Chairman and Members of the Local Board of Health of

GENTLEMEN,—In view of the outbreaks of smallpox, which have so frequently occurred in Ontario during past years, and remembering, especially, the recent most serious epidemic in Hungerford Township, the results of which are still being felt in neighbouring municipalities, where cases traced directly or indirectly to it have occurred and still exist, it has become apparent to the Provincial Board of Health that, in order to prevent or limit such outbreaks, the provisions of cap. 191, Revised Statutes of Ontario, will require to be efficiently carried out and enforced by the various municipalities of the Province.

A difficulty which existed up to 1884 was that, while the provisions of the Vaccination Act were compulsory as regarded cities, yet the municipal authorities in health matters, having no distinctive *status*, were never in a position to carry the Act into force. With the Health Act of 1884, which, in addition to extending the compulsory provisions of the Vaccination Act in towns, villages and townships (clause 65), has given to each municipality a Local Board of Health, whose special duties refer to all matters affecting the public health, a means has been supplied by which municipalities can, with the greatest convenience, put in force the provisions of the Vaccination Act. That it was intended that public vaccination should be controlled by Boards of Health is apparent from the fact that clause 9, Public Health Act, 1882, requires the Secretary of the Provincial Board to keep at all times a supply of vaccine on hand.

Without going into the details of the various sections of the Vaccination Act, cap. 191, R.S.O., this Board desires to point out the facilities which the establishment of Local Boards of Health supplies to Municipal Councils for efficiently carrying out its provisions:

1. The Health Act, 1884, gives the Council power to appoint a Medical Health Officer, who is to be an officer subject to the direction of the Local Board of Health. Now, were such an officer appointed with the understanding that vaccination should be (under sec. 1, Schedule A, Public Health Act, 1884) one of the duties, the Board could arrange for the payment of his salary, by supplying him with vaccine to vaccinate all poor people, as is provided for by the Vaccination Act, and by authorizing him to charge 25 cents for each successful vaccination of all other persons, for which he is required to give a certificate.

2. The second great advantage in having this work carried on by the Local Board of Health would be, that it could obtain information regarding vaccination through the sanitary inspector, who would very easily obtain all the facts regarding the number of persons *vaccinated* and *unvaccinated*, in his visits to different houses, and thereafter report them to the Secretary of the Board, who, by printed forms, could notify them of the requirements of the Act and the penalties for their non-fulfilment. The returns made by the Public Vaccinator to the Board of those successfully vaccinated, would place it in a position to take such measures as would secure compliance with the Act. The Secretary of the Local Board of Health, who is likewise Registrar of Births, would be in a position to know those newborn children remaining unreported as vaccinated at the end of the year.

3. The third advantage of such an arrangement would be, that the Local Board has every facility for supplying all practitioners within the municipality with printed blank forms, similar to those in Schedules A, B, C, of the Vaccination Act, to be filled in and given by them to patients who have applied for vaccination to them. The Sanitary Inspector could at once be assured that vaccination had been successfully performed in the members of any family, through the production of a certificate or filled-in blank.

4. The fourth advantage would be that the Public Vaccinator could, through arrangements made by the Local Board of Health, attend at stated intervals of time at convenient centres, to which all could come and be sure of being vaccinated with reliable and fresh vaccine.

This latter point is of the utmost importance, inasmuch as the experience of the Secretary of the Provincial Board during the past three years, in which he has kept on hand a supply of vaccine *virus*, has demonstrated that regularity of demand and the use of the *virus* when fresh, is the only condition of successful vaccination.

Hoping that at the next meeting of your Board this matter may receive that full consideration which its importance deserves, and that the Board will at once by resolution bring the matter before the Council, and have arrangements made for carrying on the work along with other necessary public health work; and trusting that the Provincial Board of Health may very soon hear of the successful operation of the Vaccination Act in your municipality.

I have the honour to be,
Your obedient servant,

PETER H. BRYCE,
Secretary.

Repeated references to the subject and to the necessity for the completion of local health organizations by the appointment of Medical Health Officers were month after month made in the Health Bulletin. As illustrating this, the following extract from the Bulletin for June is taken:

"It is gratifying to report that, excepting the Cholera scourge in the south of Europe, especially in Spain, health reports generally indicate a general freedom from severe epidemics of any kind either in Europe or America. In England and Wales the mortality in twenty-eight towns with a population of 9,000,000 fell in June to the unusual place of 18·6 per 1000. While such a state of affairs is most gratifying, we cannot forget the fact that such diseases as Smallpox, though in smaller amounts, still exist in

several parts. In London, 859 patients were in the hospitals in June, and cases were reported from Manchester and Greenock. To come nearer home, twenty-two deaths from Smallpox occurred in Montreal in June, showing, that while there is danger from cases imported in immigrants, there is a greater danger lurking at our own borders. It is most gratifying to chronicle the fact, that in several instances rural municipalities are evincing a wise precaution, which with greater reason might be followed by larger centres of population more exposed to contagion by travellers, in their Local Boards having undertaken through their Medical Health Officers, a thorough vaccination and re-vaccination of their entire populations. To show how greatly needed was the precaution, it may be stated that 75 per cent. of the vaccinations in one of these townships are reported to be successful."

Formal notification was sent out in June to councils in exposed localities along the Ottawa and the trunk lines of railways leading from Montreal, to appoint Medical Health Officers.

The following is a copy of the circular:

OFFICE, PROVINCIAL BOARD OF HEALTH,

TORONTO,.....188

To.....

DEAR SIR,—In view of the widespread existence of smallpox and the imminent danger there is of an epidemic of the disease occurring therefrom in this Province, I would request you, in conformity with Sections 2 and 3, Public Health Act, 1885, to at once—*within five days*—report the appointment by the Council of your municipality of a Medical Health Officer, who shall be prepared to vaccinate and take such other prophylactic measures as will be most likely to limit the disease, should it make its appearance in your municipality.

I have the honour to be,
Your obedient servant,

P. H. BRYCE,
Secretary.

N. B.—Should the Council not have already complied with the provisions of Section 12, Health Act, 1884, they will, I trust, do so without delay, in order to thus avoid the disagreeable duty imposed upon this Board of carrying out the provisions of Section 19 of the Act.

A number of municipalities were prominent in the matter of early and general vaccination, and of these several townships of the County of Waterloo are especially deserving of mention, the example being set by Waterloo Township.

Though of course some pretty accurate idea was obtainable from the Monthly Vital Statistics which gave the deaths in Montreal for June as 22, the alarm regarding the outbreak did not become general in Ontario until Sir Francis Hincks had succumbed to the disease, probably contracted through exposure to the contagion brought to his house by his servant, and first cases directly traceable to Montreal, had occurred in Cardinal, in Cornwall, in Toronto, and in Ottawa. Vaccination on the part of private citizens became general in many of the more exposed centres of population and even in many townships of the Province, and on the 31st of August, I find from direct correspondence and from statements gathered from Annual Reports of Local Boards, that vaccination under Cap 191 R. S. O., was being prosecuted in over 100 places.

Such is a statement of what may be called the routine work of the Board up to this date, but the threatening aspect of the Montreal outbreak had caused your committee on epidemics to consider what further means was possible to protect the Province from fresh outbreaks. A conference on the subject was held with the Minister, when your committee were asked to make a statement of the regulations the Board deemed necessary to be adopted. Accordingly a Statement was prepared and sent to the Minister, to which he sent a reply urging that the Provincial Board should vigorously stir up Local Boards and Municipal authorities to carry out a general vaccination of the people.

This reply to the Board's first request for extended powers did not place it in a position which could be called satisfactory in view of cases having occurred in Toronto,

in view of the Medical Health Officer of the city asking for Provincial protection against such unwelcome visitants, and with the prospect of a still greater influx of Montreal people during the time of the Industrial Exhibition.

In their difficulty your Committee bethought themselves of obtaining from the railway authorities information both as to the extent of the danger from their stand-point and what steps they were taking to protect travellers. A prompt and courteous reply was at once obtained from J. Stevenson, Esq, General Superintendent G. T. R., Montreal, accompanied by a request to come to Montreal and attend a meeting of the Transportation Companies. In compliance with the request Dr. C W. Covernton, Chairman of the Board, a member of your committee, left for Montreal accompanied by Dr. T. S. Covernton, who subsequently was appointed by your Board as Chief Inspector on the Montreal staff, on passes kindly supplied by the G. T. R.

The next day an informal meeting was held at the office of Dr. Anderson, American Consul at Montreal, the report of the proceedings of which meeting are best summed up in a communication sent me by the chairman by the evening mail of the same day.

St. Lawrence Hall,

Montreal, August 28th, 1885.

P. H. Bryce, Esq., M. D.

Dear Doctor,—I arrived here safely this morning and met a number of gentlemen representing the City of Montreal, and various American and Canadian transportation companies, at the office of the American consul here, Dr. Anderson. They did me the honor of electing me Chairman of the informal meeting, and after thanking them I went on to state the position in which Ontario is placed, what our Board has done in completing local organizations, and what we are prepared to do in order to prevent or minimise the very great danger of the spread of the infection from the boundaries of Quebec to our own Province, as also the losses consequent upon the serious interruption to trade and travel that must follow if there was any doubt in the public mind of the precautionary measures being fully equal to the occasion. The views of Dr. Rogers, of the Grand Trunk, Dr. Girdwood, of the C. P. R., and especially of the representatives of the New Hampshire, Vermont and New York Boards, were practically the same as ours, to the effect that unless without any delay the Board of Health of the City of Montreal took the necessary steps for preventing travel by rail or steamboat of all persons who had been exposed to the infection, and in whom the disease might be incubating, as also against shipping or forwarding by rail infected goods, merchandize, baggage to any place beyond the frontiers of Quebec Province, all communication by water or rail should be cut off.

The Grand Trunk and C. P. R. have, as you will see by the enclosed copies, issued regulations requiring all their employees to be vaccinated; and the propositions which have been drafted and are to be discussed at an adjourned meeting to be held four days hence will, if adopted, put matters in such a shape that we may expect some practical efforts to be made. The merchants, as I understand, are beginning to arrange for their own protection by having physicians visit their employees and urge vaccination, but as yet no thorough attempt has been made to cope with the terrible scourge, many saying it is not so bad as outside people believe. After the meeting, Dr. Theodore (Dr. T. S. Covernton) and myself took a carriage and drove through the suburbs of Ste. Cunegonde, Ste. Jean Baptiste, and some of the streets in the eastern part of the city, where from the published deaths everyone knows there are many cases of the disease, and in very few instances did we see the placard with "picotte" on houses. In fact the placards are torn down as fast as put up. As I was fatigued, Theodore visited a number of the merchants dealing in ready-made clothing, furs, boots and shoes, etc., and obtained the knowledge that some of them were beginning to get afraid for their outside trade. From all I have been able to learn in a few hours here, things are in a very bad shape, and it will be necessary for us to act promptly if we are to keep the disease from spreading widely in Ontario. Bring the whole matter contained in my letter before the Government as soon as you get this, and telegraph me results. We shall stay over for the adjourned conference to meet on Tuesday. With kind regards,

Yours faithfully,

C. W. Covernton.

The report was of such a character, that prompt action on the part of your Committee was peremptory, and accompanied by Dr. Oldright, I proceeded to lay the Chairman's report before the Attorney General, the Minister of the Department being absent from the city. The Attorney General agreed with us, that the situation was so critical that the emergency demanded that all doubts as to the limits of the Board's powers, must be made secondary to the interests and safety of the Province, and directed the Board to at once prepare such regulations as would place it in a position to take prompt and effective action for protecting the Province. Two days thereafter, the Smallpox Regulations, subsequently, with slight alterations, made law by Order in Council, were submitted to the Government for approval, and I was directed by the Minister to at once proceed to Port Huron and Detroit, to investigate the inspection service instituted there, by the U. S. Marine Hospital Service. This I at once did,. reported upon the same the subsequent day to the Minister, and on Friday the Regulations were passed by the Lieutenant-Gover-

nor in Council. On the fifth of September, a special meeting of the Board was held, at which the Chairman, having returned from Montreal, presented his report, and I, having arrived from the West, was in a position to explain the action taken by the United States authorities on the frontier. The Regulations were formally adopted by the Board, and on motion, it was determined to at once appoint a staff of Inspectors, with a chief of staff in Montreal, to operate on all trains and boats leaving that place for Ontario. Dr. T. S. Covernton was appointed as Chief of Staff, and was directed to proceed, should he accept the appointment, at once to Montreal to organize the service. He accepted, and the next twenty-four hours were occupied by myself in outlining his plan of operations, and in instructing him generally in the duties the Board expected him to perform. He arrived in Montreal on the morning of the 7th September, supplied with letters from this Board to the President of the Quebec Provincial Board, to the Chairman of the Montreal Civic Board, and to the Chairman of the Trades Sanitary Association. The same day Dr. J. F. Bell and Dr. E. M. Hewish were appointed to Montreal, to coöperate with Dr. Covernton, and by the end of the week Dr. E. H. Williams, Dr. J. E. Elliott, and Dr. J. C. Burt, had all been appointed to proceed to Montreal and engage in the work. Dr. Beemer was, at a later date, appointed to assist Dr. Covernton in Montreal, and Dr. C. F. Hamilton, of Cornwall acted for a time as an officer of the Board at Cornwall, to inspect all vessels and passengers passing westward through the canal. The following are the regulations governing the action of the Board:

(Regulations issued by the Provincial Board of Health, published in Ontario Gazette, September 5th, 1885).

IN THE MATTER OF SMALLPOX.

Whereas, owing to the prevalence of an epidemic of smallpox in Montreal, there is danger of the disease becoming epidemic in Ontario; therefore, the Provincial Board of Health, subject to the approval of the Lieutenant-Governor in Council, enacts the following regulations:

1. Wherever smallpox is present in any municipality in Ontario, the Council of every such municipality, and of every municipality adjoining the same, shall at once appoint one or more sanitary policemen for the purpose of assisting to arrest the spread of the disease, and the Council of any municipality in Ontario where the Provincial Board of Health deems the appointment of one or more sanitary policemen necessary, shall also make such appointment. If the Medical Health officer of the municipality, or the Provincial Board of Health, require the appointment of any specified number of sanitary policemen, then such number shall be appointed. In case the Council of a municipality neglects or refuses to make the required appointments, the Provincial Board of Health may appoint as many sanitary policemen for such municipality as it deems necessary.

2. Any default on the part of the authorities of any municipality in taking immediate and effective action in carrying out the regulations of the Provincial Board of Health, or of any of the Health Acts of this Province, or of any Health By-law in force in the municipality, shall be at once reported by the Medical Health officer to the Secretary of the Provincial Board, in order that the said Board may take such measures as it deems requisite for placing the said municipality in a position, as regards its sanitary arrangements, to effectively combat the said disease.

3. On the occurrence of the first, or any, case of smallpox in a municipality, the Medical Health Officer shall at once remove the person attacked to the isolation hospital, tent, or other place provided under section 44 of the Public Health Act, 1884, or cause such person to be otherwise efficiently isolated, and shall take proper measures for the disinfection, or if necessary the destruction, of all clothing which may have been exposed to the contagion, and for the disinfection and purification of every conveyance, rail-car, steamboat, sailing-vessel, carriage, or other vehicle, which may have been exposed to the contagion.

4. He shall further place in another building, or tent, which shall be provided by the Local Board of Health, all persons who may have been exposed to the contagion, and shall supply them with all necessaries until the period of incubation of the disease shall have elapsed, and no such person shall go, or be permitted to go, abroad until he or she has given satisfactory proof of successful vaccination within the preceding seven years, or shall have obtained a medical certificate of insusceptibility to the vaccine disease, nor until the clothing or effects worn or carried by or with him or her have been properly disinfected, if the same have been exposed to contagion.

5. When any vessel coming from an infected locality enters any port in Ontario, the Medical Health Officer having jurisdiction in the port shall make a strict inspection of the vessel and examination of the passengers, officers and crew, luggage, clothing, bedding, freight or other effects, before any person, luggage, freight or other thing is landed, or allowed to be landed from it, and where any infected or exposed person is found on board, he or she shall be dealt with in the manner directed in the preceding regulation numbered four, and no luggage, freight or other thing shall be landed from the vessel until they have been thoroughly disinfected.

6. With a view of preventing, by means of a systematic inspection of passengers, baggage and cars, the introduction of infected persons, things and conveyances into the Province, the Provincial Board, during such time as the present epidemic of smallpox exists in Montreal, or an epidemic of smallpox exists in any other locality, by which epidemic the health interests of this Province are, in the opinion of the Board, likely to be affected, may appoint Medical Inspectors who shall perform such duties as may be assigned to them by the Board, and may board all trains entering this Province from Montreal, or such other locality, and all boats bearing passengers from Montreal, or such other locality, to Ontario ports, and any other train or boat suspected of having infected persons, luggage, freight or other effects on board, and every such Inspector may take in respect of such persons, luggage, freight or effects, any sanitary precaution authorized by any of the Health Acts of this Province, or by any regulations issued by the Provincial Board of Health, and sanctioned by the Lieutenant-Governor in Council, which, in the opinion of such Inspector, are expedient for the purpose of guarding against the further introduction of smallpox into Ontario. The Inspector may require any person travelling on any such train or boat, either to produce for examination by the Inspector, a medical certificate of such person having been vaccinated within the preceding seven years, or not being susceptible to the vaccine disease, or to exhibit to such Inspector the marks on his or her person of successful vaccination, such as to satisfy the Inspector that the same has been performed within seven years, and on default the Inspector is empowered to vaccinate such person, either before he or she is permitted to leave the train or boat, or immediately thereafter, at his discretion; and each person so travelling shall answer truthfully all reasonable questions which an Inspector shall, in the performance of his duty, ask such person with reference to the places such person has been at, and his or her stay there during the fourteen days next preceding such inquiry being made; and in case such person refuses, or omits so to do, the Inspector shall be justified in presuming that such person has been within such time exposed to infection, and in acting accordingly.

7. Local Medical Health Officers, and all other sanitary officers, shall, whenever required by the Medical Inspectors appointed by the Provincial Board, aid such Inspectors in providing for and compelling the removal of suspected or infected persons from trains or boats, and for isolating and vaccinating such persons, and for supplying them with medical aid; and the expenses attendant upon the discharge of such duties shall be borne by the Provincial Board in all cases where the persons for which they are performed are unable to pay therefor, and are not residents in the municipality in which they are taken care of.

8. In every municipality in which smallpox exists, such local arrangements as are provided for by Chapter 191 of the Revised Statutes of Ontario, shall be made by the Local Board of Health for the systematic and compulsory performance of vaccination, wherever the Council of any locality shall omit to make such arrangements, or may not be authorized by the said Act to make the same. In every such municipality any person

who has not been successfully vaccinated within seven years, or who does not hold a medical certificate of his of her insusceptibility to the vaccine disease, ascertained upon an attempt to vaccinate made within seven years, shall procure the vaccination of himself or herself within three days of being requested in writing by any Health Officer of the municipality to obtain vaccination, or within a like period after public notification by the Local Board of Health, directing general vaccination of the inhabitants of the municipality, has been issued, and in case such vaccination is not successful, every such person shall have the operation repeated until the same is successfully performed, or he or she obtain a certificate of insusceptibility to vaccine disease.

9. Until the publication of notice in the *Ontario Gazette* removing the prohibition, no rags or clothing shipped by boat, rail-car or other conveyance, as merchandise from Montreal or other infected locality, shall be landed or permitted to be landed in any part of the Province, unless accompanied by a properly authenticated certificate from a Health Officer appointed under the Health Act of Ontario, or from some person approved of by the Provincial Board of Health, certifying that the said articles had been properly disinfected before shipment, or were free from infection.

10. The Medical Inspectors to whom is assigned the duty of inspecting trains and boats running from Montreal westerly shall, in respect of the duties hereinafter mentioned, be governed by the following rules :—

(1) An Inspector shall attend at the Railway station or steamboat wharf at Montreal, a reasonable time prior to the departure of every boat or train going west, and shall whenever he deems it expedient, take passage on such boat or train ;

(2) He shall notice whether passengers have come off the trains or boats, or whether their journey commences at Montreal ;

(3) He shall notice whether passengers have tickets direct from Montreal, or whether the dates on the tickets show that the passengers have probably stopped over there or elsewhere ;

(4) He shall note the destination of all such persons ;

(5) He shall obtain information as to the quarters whence they have come, and whether there is any reason to suspect their being infected ;

(6) If the Inspector believes that any such person is infected, or that his or her clothing or other effects contain infection the Inspector shall detain such person, and his or her clothing and effects aforesaid at some convenient point *en route*, until the period of incubation is over, and the clothing and other effects shall be at once disinfected ;

(7) If the Medical Inspector only suspects that any person on board, or the effects of any such person have been exposed to infection, the Medical Inspector shall notify the Medical Health Officer of the locality to which the person is going, to meet the train or boat, and to keep the said person thereafter under observation ;

(8) In either of the cases mentioned in the two next preceding rules, unless the person believed to be conveying, or suspected of conveying contagion, shows satisfactory proof of vaccination within seven years, or of insusceptibility to the vaccine disease, he shall be forthwith vaccinated ; and, if necessary shall be detained by the Local Health Officer until vaccinated by him or some other proper person ;

(9) The effects of persons regarding whom there is suspicion, should be dealt with as directed by the Public Health Act, 1884 ;

(10) The action to be taken in the event of a case of smallpox being discovered is shortly as follows : (*a*) Detention and isolation of persons affected ; (*b*) Fumigation of car or boat ; (*c*) Vaccination of all persons who have been exposed to the contagion ; (*d*) Detention of any person who refuses to be vaccinated ; (*e*) Notification of Local Health Officers at places of destination ;

(11) The Medical Inspector to whom is assigned the duty of inspecting trains or boats running from any other place than Montreal, shall be governed by the rules laid down in Regulation 10, substituting the name of such place for Montreal, and such rules shall apply in whatever direction the boat or train may run from such place.

The details of the inspection as carried on at Montreal, and the amount of work involved in it can be best told in the following report as drawn up for me, by Dr. T. S. Covernton:—

St. Lawrence Hall, Montreal, Jan., '86.

To Peter H. Bryce, M.D.,

Secretary Provincial Board of Health, Toronto.

Sir,—I beg to submit my report of work done up to Dec. 31st, 1885, by the staff of Medical Inspectors, appointed by the Provincial Board of Health in accordance with the Order in Council, approved by the Lieutenant-Governor Sept. 4th, and published in the *Ontario Gazette*, Sept, 5th, 1885. During the last week in August, an enquiry was made into the exact state of smallpox in Montreal, by the Chairman of the Board and myself, a report of the same being submitted to you. On receiving my appointment as Chief of a Staff of Medical Inspectors to carry out the Rules and Regulations of the Board, I was instructed to at once proceed to Montreal and get matters into shape so as to have a thorough supervision over all routes of travel, and the shipment of clothing from Montreal. I reached this city on the morning of Sept. 7th., and presented my credentials to the Chairman of the Local Board of Health, and the Chairman of the Provincial Central Board of Health. The latter met to organize on that day. I also attended a meeting of the Trades Sanitary Association, and arranged to issue certificates at once for clothing to be shipped to Ontario. I was met in a fair spirit by the merchants, who, saw in the protective measures adopted by the Provincial Board of Health, a means to remove the fears felt in the West, in regard to goods coming from Montreal. This work was gradually proceeded with, until over eighty firms made use of the certificate, the majority in conformity to the law, but many of them availing themselves of it for their own protection, on account of the panic which everywhere prevailed, in regard to articles of merchandise of various kinds, and which caused a large number of orders to be cancelled.

This fear later on became general, and certificates were issued to the Province of Quebec, Nova Scotia, Prince Edward Island, and Manitoba. As this work increased rapidly, Dr. F. Beemer was appointed as my assistant, and office hours kept in the St. Lawrence Hall from 9 a. m. 'till 6 p. m. Over 20,000 certificates, representing as many shipments, have been issued and signed in triplicate during the past four months. This will give some idea of the amount of work done in carrying out the Regulation. To do this intelligently, it was necessary to make frequent visits of inspection to the various mercantile houses.

Early in September the Marine Hospital Service of the United States established quarantine along the borders of the States of Maine, New Hampshire, Vermont, New York, on the South, and along the Michigan frontier at Detroit, and Port Huron, on the West. This made vaccination compulsory for all parties desiring to travel, and the "Certificates of Vaccination and Freedom from Infection," issued by us, were received by the American Officials. The office was soon besieged by people who wished to be freed from the annoyance of having their baggage fumigated, or being possibly detained. To carry on this work, both of us were kept busily employed, besides which a large number of inspections of private houses had to be attended to. The number of vaccination certificates issued to persons travelling to the United States and Canada both on the trains and the central office in Montreal far exceeded 15,000.

To demonstrate to Boards of Health and Health Officers in the United States and Canada, the nature and extent of the precautionary measures adopted by your Board, the following circular was addressed to all parties interested in the matter, with the result of having the certificates issued by the staff respected and general confidence placed in the thorough nature of the precautions taken:

(*Copy of Circular Letter Issued.*)

THEODORE S. COVERNTON, M.D., L.R.C.P. EDIN., Licentiate in State Medicine, Univ. of Cambridge,

Chief of Staff.

ST. LAWRENCE HALL, MONTREAL, 1885.

SPECIAL WORK.

1. Inspection of clothing, furs, boots and shoes and rags, and giving certificates for shipment.
2. Granting certificates, as per enclosed samples, of (1) vaccination, (2) freedom from infection of passengers and baggage to all parts of Dominion and United States.
3. Correspondence with Dr. Bryce and sending reports from inspecting officers under his control.
4. Supervision and direction of staff, as follows:

A. DR. JAS. F. BELL,
B. DR. E. M. HEWISH,
C. DR. J. C. BURT,
— Duty on G. T. R., inspection of trains as far as Cornwall, and on night Express to Gananoque. Granting certificates of vaccination and of freedom from infection where the evidence is forthcoming. Fumigation at Lancaster and Ottawa on Grand Trunk and Canada Atlantic Railways.

D. DR. J. E. ELLIOT,
E. DR. E. H. WILLIAMS,
F. DR. F. BEEMER,
— Similar duties on C. P. R. to Ottawa daily.—One officer stationed at Ottawa, one to be stationed at Calumet *(to watch passengers going into Province of Ontario at this point)*, and one officer stationed at Montreal. Fumigation at Ottawa on the Canadian Pacific Railway.

G. DR. C. J. HAMILTON, Cornwall.—Inspection of all steamers, propellors, tug boats, scows and sailing vessels at entrance to Cornwall Canal. Vaccination of crews, and, in case of smallpox on board, immediate relegation to a smallpox hospital there established, and isolation of all persons suspected of having the disease in the incubative stage. Arrangements for fumigation were made here. All steamers are also inspected at Montreal or Lachine before leaving for destination.

Average amount of travel for each inspector daily, 300 miles.

From the commencement the different railroad and forwarding companies evinced the utmost willingness to assist in the work by granting passes over their lines and giving instructions to their officials to render every assistance in their power. By this means, what was often an arduous and disagreeable task was rendered more easy and effectual. Arrangements for the detention of suspected cases were made at Ottawa, Alexandria and Lancaster. A great deal of opposition was made in some instances to those places being made Detention Stations, the people fearing that smallpox would be brought to their district and business be injured. Satisfactory arrangements were at last made at these points when the authorities saw that the measures taken were in their interest. Sanitary policemen were appointed in each place whose duty it was to meet each train and assist the Medical Inspectors by convincing those who were inclined to resist the law, that they must either submit or be arrested for the purpose of detention and observation. The police also attended to fumigation when required. All sorts of devices to evade vaccination were made use of, such as sewing a button to the undershirt to simulate a scab, a handkerchief bound round an arm which was represented as very tender and painful, and many others. They were, however, soon detected and the enquiry made most stringent, the arm being required to be shown in confirmation in all doubtful cases. A great amount of difficulty was experienced by persons tendering the certificates of others, or by false certificates being given by the medical men who wished to deceive the Inspectors and please their patients by having them freed from vaccination. By watchfulness these were easily detected and the efforts of the Press and the Provincial Board of Health, who entered prosecutions against several medical men, succeeded in exposing them to the contempt of the public and lessening such reprehensible practices. Vaccination has been performed on the trains and in this office, 150 points being used daily for some time. Dr. Rauch, Secretary of the Illinois State Board of Health when here investigating the Quarantine regulations on the St. Lawrence, was so well pleased with the work we were doing and satisfied that we were protecting the Western States, that he furnished me with 50 points of vaccine daily for some time.

When one considers the large amount of traffic for the west over the Grand Trunk and Canadian Pacific Railways, it can be easily seen that the work of an Inspector, if conscientiously performed, is a very onerous and trying one, requiring no small amount of tact and firmness to deal with the different cases and overcome all scruples and difficulties.

As it was unnecessary and impossible to fumigate all baggage coming from Montreal, the numbers and streets, alphabetically arranged in small index books, of all infected houses in the City were obtained from the Local Board of Health and posted from week to week. Each Inspector was furnished with one by which means he was enabled to determine whether the passenger had been living in any infected house or locality, and decide whether it was necessary to detain the individual, his baggage, or both. These books have proved of the greatest possible assistance and formed a good guide for a fair selective method of fumigation.

The places at which and the manner in which the disinfection of suspected baggage was carried out, may very properly be referred to here.

At Lancaster on the Grand Trunk Railway and at Ottawa on the Canada Atlantic and Canadian Pacific Railways, arrangements were made for the fumigation of suspicious baggage. A box car was placed in convenient position in the yard of each railway station and a Sanitary Inspector appointed, whose duty it was to meet all trains and fumigate all baggage put off by the Medical Inspector. This officer had to see that such work was thoroughly done, and to aid in its performance so that he could be responsible for the contents of the detained luggage. In such cases the key was obtained from the passenger with the number of the check, and after the baggage had been fumigated, the key was put in a key envelope made of heavy paper, and the envelope sealed with wax and attached to the trunk, *e. g.*

KEY ENVELOPE.

No. of Check.....

Detained for fumigation at.....

Fumigated.....

Signed.....

Medical Inspector.

Fumigation was carried out in the box-cars by having pegs driven in all round the car, and ropes strung from side to side on which to suspend the different articles.

Three pounds of sulphur to 1,000 cubic feet of air were then burnt in the car in an iron vessel by means of live coals and the car tightly closed and left for six hours, when the trunks were repacked and handed over to the baggageman. By this means baggage was only detained over from one train and no serious inconvenience caused to the passenger.

Besides the regular work of the staff thus outlined I have, in order to prosecute the work more thoroughly, made special trips of inspection along the lines of the three railways as also on the boats which ply on the Ottawa and St. Lawrence rivers, for the purpose of ascertaining at what points the disease prevailed, and urging thorough precautions on the authorities. The steamers ceased to run on October 30th, when the canals were closed. Visits have also been made at various times, either in compliance with instructions from you, or on private information regarding the prevalence of smallpox, to the following places, and a report sent to the Provincial Board of the precautions taken, viz: Cornwall, Lancaster, St. Polycarpe and Casselman, on the G. T. R. and C. A. Railways, and at Hawkesbury Mills, L'Orignal, Vankleek Hill, St. Eugene, Point Fortune, Carillon, P. Q., Chute au Blondeau, Montebello, P. Q., Thurso, P. Q., St. Thomas, Plantagenet, Clarence Creek, Alfred and Ottawa, along the shore of the Ottawa River and near to the Canadian Pacific Railway.

As several cases had occurred in and around Renfrew, in the townships of Horton and McNab, I made a thorough inspection and reported to you. Arnprior was also inspected. A personal visit to these muncipalities was highly useful in giving confidence to Local Boards of Health, and promoting vaccination and other sanitary precautions. In many places a good deal of prejudice to vaccination was shown, and wherever the French Canadian element predominated this difficulty was sure to crop up.

It gives me pleasure to state in concluding that the several members of the staff have performed their arduous and oftentime unpleasant duties in a way that has elicited the highest praise from those who have been most capable to pass judgment, and I have to thank them one and all for the readiness with which they have always complied with any suggestion of mine to render the work more efficient.

I have the honor to be, Sir,
Your obedient servant,

THEODORE S. COVERNTON.

P. S.—In order to give in brief a summary of what the work has been and how carried on, as well as the opinion of the work from a Montreal standpoint, I herewith append statements kindly furnished me by the Grand Trunk Railway and the Canadian Pacific Railway, which show the amount of work done on those lines without including that performed in connection with the St. Lawrence boats; also an extract from the Montreal *Star* of the 5th December.

GRAND TRUNK RAILWAY.

STATEMENT shewing the number of Passengers on trains leaving Montreal for the Province of Ontario during the months of September, October, November and December, 1885.

MONTHS.	NUMBER OF PASSENGERS.	REMARKS.
September	20,482	
October	15,947	
November	14,445	
December	16,466	
Total	67,320	Or a daily average of 550

CAR MILEAGE OFFICE,
January 12th, 1886.

J. G. HUNT,
Car Distributor.

CANADIAN PACIFIC RAILWAY.

TATEMENT shewing the number of Passengers on trains leaving Montreal for the Province of Ontario during the months of September, October, November and December, 1885.

GENERAL SUPERINTENDENT'S OFFICE,
MONTREAL, 16th January, 1886.

T. S. COVERNTON, ESQ., M.D.,
St. Lawrence Hall, Montreal.

DEAR SIR,—The auditor informs me that there were about 45,000 passengers left Montreal for the West by our line during the months of September, October, November and December last.

Yours truly,

W. W. WHYTE,
General Superintendent.

(*Extract from Montreal Star, 5th December, 1885.*).

ONTARIO PROTECTING HERSELF—WORK OF THE ONTARIO BOARD OF HEALTH IN MONTREAL—WHAT THE MERCHANTS THINK OF IT.

There still lingers an impression in this city that the Government of Ontario instituted their elaborate systems of medical inspection, with a view to injure the trade of Montreal. Such a belief is entirely unfounded as a short recital of the work done will show. Ontario was bound to protect herself against the introduction of smallpox from Montreal. Two methods of doing this were open to her. On the one hand, a vigorous quarantine might have been established on the Ontario border, and all goods and passengers from Montreal might have been detained, the first until disinfected, the second till all chance of their propagating the disease had ended. This would have been the cheaper mode of working and would have done the greatest possible injury to our city. The other method open was what might be called intelligent sanitation and this, as the least oppressive means of protecting Ontario against Montreal, was adopted.

A staff of eight physicians was organized to defend the frontier and their headquarters were placed at Montreal. The special work of the Inspectors here consists in the inspection of clothing, furs, boots, shoes, rags, and giving certificates for shipment as under:

I hereby certify that the Merchandise contained in parcels Nos.....and consisting of..... .....has been approved of by me, satisfactory evidence of its freedom from infection having been obtained.

Signed..... .....
Medical Inspector.

Montreal..... 188

Of course it would be impossible for the Medical Inspector to examine every bale of goods which leaves Montreal. His plan is to examine all the factories and warehouses from which goods are shipped. He ascertains to his satisfaction that the merchants and manufacturers are taking proper precautions to prevent contagion being carried in their goods. This must be done in conformity with the rules and regulations of the Provincial Board of Health of Ontario. Beyond this with every bale of goods the shipper has to furnish his own certificate that they are free from infection, This certificate is fyled for future reference in case of necessity. Certificates of vaccination and freedom from infection for passengers and baggage to all parts of the Dominion and United States are also issued as below:

CERTIFICATE OF VACCINATION

ISSUED BY

Provincial Board of Health, Ontario.

I hereby certify that the bearer..... .....has been this day vaccinated by me, or has given proof of successful vaccination.

Signed.

....
Medical Inspector.

Official Stamp.

Signature of person vaccinated.
JOHN SMITH.

PASS

ISSUED BY

Provincial Board of Health of Ontario.

I hereby certify that the bearer..... coming from Montreal to.....has given satisfactory proofs of vaccination and freedom from infection.

Signed,

{ Official Stamp. }

..... *Medical Inspector.*

PASS

ISSUED BY

Provincial Board of Health of Ontario.

I hereby certify that the baggage of..... coming from Montreal to.....is considered by me free from infection of smallpox, or has been satisfactorily disinfected.

Signed,

{ Official Stamp. }

..... *Medical Inspector.*

Three of the staff are on duty on the G. T. R. inspecting trains as far as Cornwall and on the night express to Gananoque and granting certificates of vaccination and freedom from infection where evidence to this effect is forthcoming. Baggage suspected of carrying infection is fumigated at Lancaster.

Other three have similar duties on the C. P. R. trains to Ottawa. A seventh is stationed at Cornwall for the inspection of all steamers, propellors, tug boats, scows, and sailing vessels at the entrance to the Cornwall canal, the vaccination of crews and, in case of smallpox on board, immediate relegation to a smallpox hospital there established and isolation of all persons suspected of having the disease in the incubative stage. Facilities for fumigation have been provided here.

The rules governing the medical inspectors are very thorough and complete. They are as follows :—

1. An Inspector shall attend at the railway station or steamboat wharf at Montreal a reasonable time prior to the departure of every boat or train going west, and shall, whenever he deems it expedient, take passage on such boat or train ;

2. He shall notice whether passengers have come off the trains or boats, or whether their journey commences at Montreal ;

3. He shall notice whether passengers have tickets direct from Montreal, or whether the dates on the tickets show that the passengers have probably stopped over there or elsewhere ;

4. He shall note the destination of all such persons ;

5. He shall obtain information as to the quarters whence they have come, and whether there is any reason to suspect their being infected ;

6. If the Inspector believes that any such person is infected, or that his or her clothing or other effects contain infection, the Inspector shall detain such person, and his or her clothing and effects aforesaid at some convenient point *en route*, until the period of incubation is over, and the clothing and other effects shall be at once disinfected ;

7. If the Medical Inspector only suspects that any person on board, or the effects of any such person have been exposed to infection, the Medical Inspector shall notify the Medical Health Officer of the locality to which the person is going, to meet the train or boat, and to keep the said person thereafter under observation ;

8. In either of the cases mentioned in the two next preceding rules, unless the person believed to be conveying, or suspected of conveying contagion, shows satisfactory proof of vaccination within seven years, or of insusceptibility to the vaccine disease, he shall be forthwith vaccinated ; and, if necessary shall be detained by the Local Health Officer until vaccinated by him or some other proper person ;

9. The effects of persons regarding whom there is suspicion, should be dealt with as directed by the Public Health Act, 1884 ;

10. The action to be taken in the event of a case of smallpox being discovered is shortly as follows:—(*a*) Detention and isolation of persons affected; (*b*) Fumigation of car or boat; (*c*) Vaccination of all persons who have been exposed to the contagion; (*d*) Detention of any person who refuses to be vaccinated; (*e*) Notification of Local Health Officers at places of destination;

11. The Medical Inspector to whom is assigned the duty of inspecting trains or boats running from any other place than Montreal, shall be governed by the rules laid down in Regulation 10, substituting the name of such place for Montreal, and such rules shall apply in whatever direction the boat or train may run from such place.

From all this it must be seen that determined as the Ontario Government are to protect their Province from infection, they yet extend every possible consideration to Montreal merchants. Their precautions are no obstacles to any who, for the sake of their fellows, take proper precautions to secure freedom from infection for all merchandize.

No scheme of this kind could be put in operation without meeting opposition from some quarter or other.

It may be added that the Inspector has yet to learn of a single case of smallpox traceable to merchandize certified by him and considering the thousands of packages certified for, it must be considered a strong endorsement of the thoroughness of this system of protection.

While the rules and requirements of the Ontario Board of Health may appear arbitrary and rigorous, it is satisfactory to know that the Medical Inspector has found the greatest readiness on the part of all manufacturers and exporters to conform with them.

The merchants who come under this system of inspection seem to recognize its advantages. One of the leading men in each of the three principal trades whose goods must be certified free from infection before they can be shipped, was interviewed regarding the system with the following result:—

Mr. Thos. Coristine, of J. Coristine & Co., thinks the inspection has been of great assistance to the hat and fur trade. Without the certificates of the Provincial Board of Health of Ontario, which accompany each shipment, the customers of the furriers would not have felt sufficiently secure to buy Montreal goods. Dr. Covernton does his work very thoroughly, and has helped the trade very materially.

Mr. Holden, of Ames, Holden & Co., was of opinion that the inspection had done good to the boot and shoe trade. For one thing, it had made the manufacturers more particular. The certificates given by the Inspector have been a great satisfaction to customers, some of whom asked for them. They certainly did away with much of the timidity that Ontario customers began to feel before the inspection system was commenced. Orders which were cancelled were renewed when the buyers learned the precautions the Ontario Government were taking. The year's trade had been no smaller than in the preceding year, a result due, in a measure, to the inspection system.

Mr. O'Brien, of Jas. O'Brien & Co., says the Ontario medical men are the most practical he has ever met, and their system of inspection is a most effective one. It has been of invaluable service to Montreal trade by securing the confidence of the city's customers and preventing outside rivals from undermining its reputation.

From the outline of work done presented in Dr. Covernton's report, we gain something, but comparatively little, of an idea of what the work of inspection and care, connected with the issue of 20,000 merchandise certificates means, and of the unremitting watchfulness and care involved in the daily inspection of some 800 passengers. Remembering this it can hardly be considered anything more than marvellous that of the more than 110,000 passengers, not including any from stations outside of Montreal, who went west on the trains during September, October, November and December, there were, as far as is known from authorities within the Province, during the period only sixteen who carried infection in their persons, only two who carried it in their baggage or clothing, and only one case from merchandise, from which, with any fair evidence, it can be said that infection was imparted. What known dangers have been escaped by the inspection can be gathered from the daily reports of the Inspectors on trains, which reports were regularly forwarded by them to the chief Inspector, and those of importance again sent directly to the office of the Board.

Report of the Medical Inspectors on Trains, of Special Incidents Connected with their Work.

REPORT OF JAMES F. BELL, M.D.

September 7th.—On the night of Sept. 7th, 1885, Dr. Hewish and I left Toronto for Montreal, where we arrived the following a.m. On the 8th I took the 5 p.m. local for Cornwall, had nothing suspicious on board—this train carries few passengers to Ontario. I met the night express (11:30 p.m.,) Dr. Hewish was on board and reported a case of smallpox. Mother and child were bound for Chicago, the child (14 months old) was just recovering from the disease; its face was covered with scabs and the head with crusts, and according to the mother, it had been ill nine weeks; the mother possessed a certificate from a Dr. ——— stating that the child was free from infection. They were detained over night at Cornwall and next morning were returned to Montreal in the car which had brought them out. Upon their arrival at Montreal, Dr. Laberge, (City Health Officer) took charge of the case and they were removed to the smallpox hospital.

During September Dr. Hewish and I had to do all the work on the Grand Trunk and Canada Atlantic R. R., besides attending to office duty. I was out every second night till two and three and even five a. m. at times and found it very hard work indeed, as we had to be at work again at 8.50 a.m. Of course everything was new at first, and it took time to learn which was the best way of working trains, etc. In the early part of our work we met with a good deal of opposition, and it was hard to deal with such people until we had sanitary policemen to meet every train—these policemen have done good, work and helped us very much in the performance of our duty. During this month we had few cases attempt to pass us, and, indeed, I may say, ever since we have been here very few cases have been caught attempting to pass westward. The explanation, I think is in the fact that the public knew we were on board the trains and were afraid to travel for fear they would be caught. During this month many people passed from the Eastern Provinces of Nova Scotia and New Brunswick, &c., bound for the Western States, and it was cause for remark how few of them had *ever been* vaccinated. These people, (both adults and children) at this time formed a large percentage of those vaccinated. And it was also during this month that we noticed that immigrants, with ship certificates, had not been recently vaccinated. I should think, at least, 90 per cent. of those possessing ship certificates, got them on the marks of infancy, (see special report Jan. 11th, 1886.) This class of people always largely increased the amount of work done. During this month I had twenty to thirty per day to vaccinate. Cannot say for certain, but think I have vaccinated close on 2,000 since we began our work.

September 16th.—Two men from Montreal to Ottawa refused to be vaccinated, telegraphed Dr. Robillard, Ottawa, but they were not arrested. This was before we had policemen at Alexandria. On the 4.30 p.m. train had man refuse vaccination, and I had to follow him to Ottawa before I could bring him to time.

September 18th.—Man—Montreal to Ottawa—ordered him off train at Glen Robertson for refusing vaccination; he returned to Montreal.

September 28th.—Man put off at Alexandria for refusing vacination. In the latter part of this month, a gentleman, just out of the smallpox hospital, called on me at the St. Lawrence Hall for a pass to Ontario; but I refused to give him one; after doing further quarantine, I believe he got his pass.

October 3rd.—On the 4.30 p.m. Ottawa train had two children recently recovered from smallpox. They were bound for Ottawa, and as they had Dr. Covernton's certificate of freedom from infection, allowed them to go on—they were two months convalescent.

October 22nd.—On this day, I had a woman and her child bound for Chicago; the child had only recovered some five weeks. There were no scales upon the face, etc., but I was afraid of the clothing, etc., and told her she could not proceed. She got off the train in the Province of Quebec, and returned to Montreal. This was before we had the fumigating car at Lancaster.

October 24th.—On the morning train west, I had a lady going to Cobourg, she came from a house on Notre Dame Street, out of which some ten smallpox patients (one dead) had been taken the previous day. I had her returned to Montreal.

In reference to the night trains, I may say, it is very difficult to tell whether there are any infected persons on board or not, as the cars, more especially the second-class, are poorly lighted, and at times, even with aid of lanterns, it is hard to tell whether a person has had smallpox or not.

October 25th.—Man refusing vaccination—put him off at Glen Robertson.
October 28th. " " " " " " Alexandria
October 29th. " " " " " " Glen Robertson.

NOVEMBER.—Did not meet with any smallpox cases attempting to pass westward during this month, but the removal of one or more persons from the trains for non-compliance with the vaccination law, was almost of daily occurrence It was in the early part of this month that the fumigation car was established at Lancaster, on the Grand Trunk, and one at Ottawa, on the Canada Atlantic—considerable fumigation being done.

November 2nd.—Man for Cornwall—off at Lancaster for refusing to be vaccinated.
" 3rd.—Two squaws—(Montreal to Ottawa) off at Alexandria, for refusing to be vaccinated.
" 7th.—Frenchman—off at Alexandria, for refusing to be vaccinated.
" 8th. " " " " " "
" " " " " " " "
" " " " Lancaster, " " "
" 12th.—Lady, from Ottawa to Lancaster—off at Lancaster, for refusing to to be vaccinated.
" " Man—off at Lancaster, for refusing to be vaccinated.
" 23 " for Alexandria—off at Alexandria, for refusing to be vaccinated.
" 25th. " off at Lancaster, for refusing to be vaccinated.—(mixed train)
" " " " " " " " (night train)
" 27th.—From Vankleek Hill to Lancaster—off at Lancaster, for refusing to be vaccinated.

December 2nd.—Man, (Montreal to Ottawa)—off at Alexandria, for refusing to be vaccinated.
" 4th.—Family—Coteau to Casselman " " " " vaccinated.
" 7th—Man—Recent patient in smallpox hospital (one month out) Montreal to Ottawa; had baggage fumigated at Ottawa; certificate of freedom from infection from hospital authorities.
" 17th.—Woman and two children from St. Cunegonde for Chicago. One of the boys had smallpox two months ago—no scales; only redness, and pitted—detained effects for fumigation; they went on.
" 21st.—Two men—off at Lancaster, for refusing to be vaccinated.
" 23rd.—Lady recently out of smallpox hospital, and with certificate of freedom from infection from Drs. Hingston and Covernton; she was bound for Alexandria.
" 24th.—Man removed at Lancaster; had bogus certificate of vaccination; was in fever, but proved he had poor health for many years; he was bound for Chicago, and was allowed to proceed by night express.
" 26th.—Two men off at Lancaster for vaccination; one of them, a Frenchman, had had smallpox many years ago, hence refusal.
" 30th.—Had woman on board bound for Coteau, P. Q., who had recently recovered from smallpox; there was no danger, as there were no scales; could not do anything, as she was not going out of the Province.

December 31st.—Had young lady bound for Alexandria arrested for refusing to show her arm.

January 1st.—Two families were on the Ottawa morning train; each had had case of smallpox in family during recent epidemic; they had no baggage—were only going on a visit of two or three days—allowed to go.

" 4th.—Party of two women and two children from Montreal to Alexandria; one of the children had had smallpox, (mild attack). Nine weeks since left the hospital; had no baggage.

" 6th.—Woman and six children bound for Chicago. Four of the children had had smallpox recently. No baggage with them, as household effects had been sent by freight

" 6th.—Man off mixed train at Lancaster—for refusing vaccination.

" 9th.—Two Frenchmen—off at Lancaster for refusing to show arms.

" 11th.—Man—off at Lancaster, for refusing vaccination.

" 16th.—Two women, (from Montreal to South Indian) had smallpox three months ago; no baggage; visiting for two or three days.

" 22nd.—Man from St. Eustache to Chicago; had smallpox six months ago.

" 27th.—On Ottawa train, (4·30 p.m.) man bound for Casselman—smallpox in his house in September last; was going to attend funeral, and then back; had no baggage. On Cornwall local, (5 p.m.) man bound for Summerstown; his brother had smallpox in September last; only away a day; no baggage.

" 29th.—Lady (Montreal to Ottawa)—off at Alexandria, for refusing to have her infant vaccinated.

Although I had a goodly number to put off the cars for refusing to be vaccinated, still there was a very large number who at first refused, but finally gave in; were vaccinated, and allowed to proceed on their journey. Of course, the French Canadians were the ones who objected most, yet I have had trouble with all classes—from second up to Pullman passengers. In reference to vaccination certificates, they are not infallible; we have come across scores of bogus ones, and the only way to avoid fraud, is to make everyone show their arms. In reference to fumigation—we have not fumigated the baggage of everyone leaving Montreal; if they came from uninfected localities they were allowed to pass, but anyone coming from infected streets had to submit to fumigation; also all those coming from other infected districts.

I may say that Lancaster has really never had a proper detention hospital; this is due partly to the fact that the people do not care to have such a place in their midst, and also to the fact that they think it is not fair to make the municipality pay for work that is really provincial in its character. Fortunately such a place has not been wanted for actual service.

I must say, before concluding, that it would be well if our Health Laws had a clause added to them, to the effect that anyone interfering with a Medical Health Officer, in the performance of his duty, would be fined, etc.; often have I had some one passenger refuse to do as I asked him, and then incite others to do the same, thereby causing great trouble. When I have brought such cases before the local Magistrates they have not seen their way clear to convict, under the Health Act.

The Quebec Health Act deals with these cases; I do not think one would have to resort to it often, for the moral effect upon the public would be good, if they knew they were liable to a fine upon interfering with an officer in the performance of his duty.

The Quebec Act is as follows:

Rule 12.—" Whoever refuses, or neglects to conform to any of the aforesaid regulations, or willingly obstructs any person in the execution of them, or willingly contravenes any of the same, shall incur the penalty of twenty dollars ($20.00) imposed by Cap. 38, of the Consolidated Statutes of Canada.

REPORT OF E. M. HEWISH, M.D.

September 7th.—On the 9 p.m. Western Express, there was a child *aet* 14 months, in the desquamating stage of variola; the child's mother and mother's sister and child were returned to Montreal in the same car, the car having remained on track, at Cornwall, all night; on returning to Montreal they were sent to hospital. On this train thirty persons were vaccinated.

September 12th.—A French family were going to Cornwall, Ontario; father and mother had variola in childhood; they would not allow their child to be vaccinated, although they had come from an infected district, so I had them given in charge at Cornwall, and after some trouble Dr. Hamilton persuaded them to let me vaccinate it.

On the Canada Atlantic Railway it was frequently necessary to give passengers over into the hands of sanitary police at Alexandria, who took them to Dr. Cameron to be vaccinated; this was a very common occurrence. Large numbers of immigrants constantly presented to us cards of "Protection," which we did not accept, as in nine tenths of the cases they were not recently vaccinated. Regarding this matter we have already sent in special reports.

On the Canada Atlantic Railway many lumbermen objected, as they also did on the Canadian Pacific Railway; one morning I went out on it, but they had themselves vaccinated before leaving the trains.

Many persons presented to us certificates, which were not of the forms which a regular physician would give, and in large numbers of cases were bogus; Dr. Covernton has now a large collection of such.

September 24th.—Young man attempted to get to Ottawa on certificate which belonged to some other person, as he had not been vaccinated. I saw him before leaving the depot, and advised him to have it done, but he left the train rather than do that. On this train I had a certificate of good health given me, no vaccination having taken place, which, of course, was rejected.

Navvies were always vaccinated by us; they probably might convey the disease readily, so we always took precautions in their case.

September 27th.—Passenger out of hospital eight days, Dr. Hamilton was notified of the case, and he looked after him, as the man went to Cornwall; this was a very mild case.

We find many natives of Nova Scotia and New Brunswick have never been vaccinated, even at the age of twenty-five years; we, however, always took precautions to vaccinate them.

October 12th.—Handed Frenchman into Dr. Cameron's hands, at Alexandria, who, looked after him, *re* vaccination.

October 16th.—Two passengers, French, rather than be vaccinated left the train.

October 20th.—Vaccinated, to-day, fifty-one persons. I heard to-day that one woman going to Casselman, one week ago, was taken down with variola; I, however, had vaccinated her, but not soon enough after exposure to contagion. This was, of course, quite unavoidable; she said there was no variola near where she resided in Montreal; she said she had *picotte* in childhood

October 21st.—On the Eastbound trains, a case of variola; was going to Montreal; cars were fumigated; we notified the Grand Trunk Railway authorities; papular stage. Took up several bogus certificates, and do so every day.

October 23rd.—Passengers, French, got off train, rather than be vaccinated. A young man went to Cornwall some days ago; he is now down with variola; I vaccinated him, but it appears not soon enough to anticipate variola

October 24th.—Put off Grand Trunk Railway employe at St. Polycarpe, because he would not be vaccinated. I have been asked to report to Grand Trunk Railway authorities all such persons.

October 26th.—Had two persons leave train at St. Polycarpe, because they would not be vaccinated.

October 29th.—Inspected *S.S. Alexandria*, vaccinated seven, and ten, who would not be vaccinated, were paid off at the time.

November 4th.—Handed two passengers into policeman's hands, at Alexandria, he took them to Dr. Cameron, who vaccinated them.

November 9th.—Returned passenger to Montreal with Dr. Bell; said passenger was only out of hospital one week, but had no certificate of discharge and freedom from infection; he waited and got necessary papers from Dr. Covernton before proceeding on his journey; he was going to Windsor.

November 9th.—Have fumigation car in good working order, also sanitary policeman meets every train, and assists in fumigation. Woman went from 307 St. Constant Street; infected house; she had variola some years ago; had her looked after by Dr. Hamilton of Cornwall, as she was going there.

November 11th.—Gave woman in charge, at Alexandria, to be vaccinated by Dr. Cameron.

November 12th.—Two youths were given into policeman's care at Alexandria.

November 15th.—Fumigated baggage of passengers going to Oshkosh, Wisconsin, the baggage came from the neighbourhood of infected houses—four trunks.

November 17th.—Fumigated two trunks and one valise. Gave lady into policeman's hands, and Dr. Harkness vaccinated her.

November 19th.—Fumigated contents of trunk going to Chicago.

November 21st.—Fumigated trunks at Lancaster; fumigated baggage from Mountain Street, Montreal; the latter was going to Cornwall.

November 22nd.—Fumigated baggage going to St. Paul, Minnesota; owner came from infected house; she was vaccinated recently.

November 23rd.—Fumigated baggage for Chicago; fumigated baggage from St. Hyacinthe; smallpox is bad there; this baggage was for Lancaster; on 9 p.m. train had four trunks and one valise for fumigation, baggage for Chicago,

November 24th.—Fumigated five pieces of baggage for Toronto and Chicago.

November 25th.—Vaccinated, assisted by Dr. Covernton, thirty persons, going to Portland to get steamer.

November 26th.—Handed passenger into policeman's hands, at Lancaster, to go to Dr. Harkness.

December 12th.—Would not allow employé of Canada Atlantic Railway to go to Ontario, as he would not be vaccinated; he had smallpox in his family in September last.

December 16th.—Handed over passenger into policeman's hands to be vaccinated, at Alexandria. Telegraphed for sanitary police at Ottawa, to fumigate baggage.

December 17th.—Vaccinated, on morning express, eighty-one passengers, the largest number, by far, yet. Many of these were Italians, and not of the cleanest type either. Vaccinated twenty-three immigrants; vaccinated to-day eighty-three persons.

December 19th.—Fumigated baggage of this train, going to Chicago, had some also put off for fumigation which came from Hochelaga.

December 22nd.—Refused to allow passenger to go to Alexandria, who was convalescent from smallpox. Dr. Covernton, after seeing Dr. Hingston and others, concluded to allow her to go.

December 23rd.—Fumigated trunks going west.

December 28th.—Passengers returned to Montreal rather than be vaccinated.

December 29th.—Young woman going to Cornwall, had recently recovered from smallpox; had certificate of discharge, but I fumigated her baggage. Fumigated baggage of young man convalescent from smallpox.

January 3rd, 1886.—Had two passengers, who were convalescent from smallpox; one had it in Hamilton, the other in London, Ontario.

January 4th.—Fumigated baggage of young lady going to Whitby.

January 6th.—Had family of six on, four of whom had smallpox lately, the others were vaccinated. These were going to Chicago.

The foregoing are among the most noteworthy of my notes, taken from day to day. On an average I presume I have not vaccinated less than fifteen persons daily, making a total of over 2,000 vaccinations. The true number may be more than this, but not less.

REPORT OF E. H. WILLIAMS, M.D.

Thursday, September 10th.—One man on 8 p.m. express did not look altogether well, but had been recently successfully vaccinated, so I did not stop him.

Friday, September 10th.—A very ugly eruption on the face of one of the passengers —train authorities wanted to stop her, but on examination determined it was a sore.

Thursday, September 17.—Had to compel three roughs to submit to vaccination at Ottawa.

Friday, September 18th.—Received some abuse from a cabinet minister while in performance of my duties.

Saturday, September 19th.—Had a very severe case of eczema covering many parts of body, which I did not interfere with, although at first it looked very suspicious. Had trouble with the High Constable of Montreal.

Thursday, September 24th.—Compelled several stubborn fellows to be vaccinated at Ottawa.

Saturday, September 26th.—Had one woman put off the train at Montreal who had come directly from an infected house. I did not compel her to get off but explained the steps I should take at Ottawa, and the R. R. conductor put her off.

Tuesday, September 29th.—A woman was going to Hull with three children of which all had been vaccinated, but one was very feverish. Of course I could not under the circumstances do anything except to have the train conductor keep the woman in a car where there were only one or two other passengers at the other end.

During month of September I did not do very much vaccination, probably not over fifty altogether.

Friday, October 2nd.—While waiting at the depot saw a child suffering from smallpox; come in on the train from St. Jerome. Kept the other passengers away from it, and saw that none going out on my train went near it.

Saturday, October 3rd.—Had to telegraph Dr. Elliott to meet train and vaccinate a suspicious individual who refused to be vaccinated, but who afterwards left the train before reaching Ottawa.

Monday, October 5th,—A woman boarded the train at Montebello who had just recovered from smallpox, and who had a few scales remaining. Although she had a certificate of freedom from infection from a French M.D., as she was going only to Hull I kept her by herself and did not otherwise interfere. On the evening express one of the passengers was very ill from the effects of vaccination. As he had a bad arm, I, however, left word for Dr. Elliott to examine him again when he reached Ottawa for fear of danger.

Sunday, October 6th.—Had four men arrested at Ottawa until they submitted to vaccination,

Wednesday, October 7th.—Investigated and reported a case of smallpox at Lachute, which is about midway between Montreal and Ottawa.

Monday, October 12th.—Reported cases of smallpox at Montebello and Pointe-au-Chene.

Wednesday, October 14th.—A child recently recovered from smallpox came out as far as St Scholastique. It had a certificate of non-infection and was quite free from scales.

Monday, October 19th.—A man who had recovered from smallpox a month ago, was going through. He had no signs of remaining scales and had a certificate from Dr MacDonald, of Montreal.

Wednesday, October 21st.—A severe case of acne frightened the passengers almost out of their senses, but on my assurance the conductor did not interfere with the man.

Thursday, October 22nd.—Exercised compulsory vaccination on a French priest, who was stubborn. Was informed of a case of smallpox having broken out at Arnprior a few days before. I remembered distinctly a number of men going to Arnprior, but also remembered having inspected them carefully, finding them all vaccinated and none of them appearing ill.

Saturday, October 24th.—Compelled an old man to submit to vaccination.

Monday, October 26th.—Prevented a girl getting on the train at Montreal who had just recovered from smallpox, for, although she had certificates of convalescence, etc., there were several scales on her neck and wrists. Also examined carefully a man who had had a very severe attack of smallpox. There were no scales on him and nothing to prevent him travelling.

Thursday, October 27th —One man on Toronto Express was very drunk, but as he also appeared sick I examined him carefully and reported his state, which did not justify his being stopped.

During month vaccinations amounted to somewhere between two and three hundred.

November 2nd.—A man came from 415 Seigneurs St. an infected house, but as he was an employee of the R. R. and had no baggage, and had been recently successfully vaccinated, I did not stop him but reported the case to headquarters.

November 3rd.—Had to have police assistance to vaccinate five roughs.

November 4th.—Put a man in police station until he got vaccinated and gave evidence of freedom from infection. Had two parcels of luggage fumigated at Ottawa.

November 7th.—Had a man detained at Ottawa until he answered my questions and gave proof of vaccination. One parcel of baggage to be fumigated.

November 11th.—Detained one man and fumigated baggage of two others who came from infected districts.

Thursday, November 12th.—A man got off at Hull to avoid vaccination, and in afternoon I saw him in Ottawa and had him arrested, In evening I put one man in police station who refused to comply with regulations. One trunk under fumigation.

November 15th.—One trunk for fumigation.

November 16th.—Fumigated baggage of three men at Ottawa.

November 17th.—Fumigated one man's baggage.

November 19th.—Fumigated baggage of two men.

November 21st.—Had trouble in vaccinating some men.

November 22nd.—Gave one man into hands of police at Hull.

November 24th.—Fumigated two pieces of baggage and gave one to Hull police.

November 25th —Had police assistance to vaccinate a man at Ottawa.

November 28th.—Had one man arrested and vaccinated him at Ottawa.

November 30th.—Put one man into police station at Ottawa and afterwards vaccinated him.

Vaccination during month about the same as in October.

December 2nd.—Arrested three men in Ottawa and vaccinated them.

December 3rd.—No police at Hull, so that a man escaped vaccination by getting off there. Arrested a man at night and vaccinated him.

December 4th.—Compelled two men to submit to vaccination.

December 8th.—One piece of baggage for fumigation.

December 15th.—One piece of baggage required fumigation.

December 18th.—Compelled a woman to comply with the law.

December 21st.—Had police assistance to vaccinate two men.

December 28th.—One man's baggage to be fumigated.

December 31st.—One trunk for fumigation.

During month vaccinations amounted to less than in November.

January 2nd, 1886.—Had trouble vaccinating two or three men.

Jauuary 5th.—One man at first refused to show me his arm but afterwards came to time. One trunk required to be fumigated. In the evening two others defied me and as I had no police assistance I could not manage them.

January 11th.—A trunk needed fumigation.

January 13th.—Had trouble with a man and two women, but made them all show me their arms but one who got away as I was alone.

January 21st.—Compelled one man to be vaccinated and sent another who refused to the police station.

The vaccinations for January were not very numerous except at the first part

REPORT OF J. E. ELLIOTT, M. D.

September 17th.—The first case of importance was a woman and three children going to Ottawa. They had come from an infected house, or next door to one. She prevaricated, but I found out, and vaccinated the children and telegraphed Dr. Robillard, who met the train and took charge of them.

September 18th.—Stopped some old furniture and bedding going on Str. *Corsican*, belonging to some second-hand jobber. Inspected "Bohemian" and found a man in the desquamative stage of smallpox. Informed the captain, who put the whole of his party (4) off. I telephoned Dr. Laberge, who came down and fumigated boat. This passenger was for Cornwall

September 22nd.—Examined *Passport* and found one passenger for Hamilton, who had just got over smallpox. He had a certificate from Dr. Covernton, but I did not think him safe, and had Dr. C. see him again, and he took his certificate away again.

Stopped woman with bundle of clothing and bedding going to Chicago by G. T. R. She had them fumigated, I believe.

September 23rd.—One woman going to Ottawa refused to be vaccinated, and she got off and went back to Montreal.

September 24th.—A prominent civic official of Montreal, refused to be vaccinated, and after being informed of the consequences if he came on, went back to Montreal. He made considerable fuss about it in the city council, but got effectually sat upon.

September 28th.—A man by name of Mercier refused to be vaccinated, and got off at Hull and took cab. I followed him into Ottawa and then went to arrest him, but he turned and galloped back into Hull and went home to Montreal.

September 29th.—Another man turned back sooner than get vaccinated.

October 1st.—A woman with two children, suffering from smallpox, was getting on, and I told the conductor to not allow her, and he did so. She tried afterwards to go by boat, but was again refused passage.

October 3rd.—One man refused to be vaccinated. Telegraphed police and had him taken to cells. He yielded next day.

October 5th.—Four roughs refused to be vaccinated; had them put in the cells over night and they submitted next day.

October 6th.—Two refused to be vaccinated, and were being taken to police when they submitted.

One old man refused, and he was sent to detention hospital, where Dr. St. Jean let him out without vaccinating him.

October 8th.—Had two roughs sent to police cells. They submitted next morning quietly.

October 13th.—Had one man put in cell for refusing to be vaccinated; he submitted next morning.

October 14th.—Joseph Devine, a driver, refused, and when he came to the station he jumped off the wrong side and ran among freight cars to escape. I caught him, and was sending him to police cell when he submitted, and I vaccinated him.

October 17th.—Had no trouble during the past four days. To-day an American refused until a policeman appeared on the scene, when he readily submitted.

October 20th.—One man refused on local, so I telegraphed police to meet train and keep him till I came, but no police came, and he got off.

Also captured forged certificates bought of a man who was selling them for twenty-five cents.

October 22nd.—Two refused to be vaccinated. Telegraphed to police, but they got off at Hull, as instructed by a priest.

To-day the car for fumigation arrived.

October 24th.—No one has yet been appointed to look after fumigation.

October 26th.—Sent one to cells who refused to be vaccinated.

October 28th.—fumigated the baggage of six who came from infected districts.

October 29th,—Fumigated one woman's baggage who had recently had smallpox, but pronounced free from carrying disease by Dr. Laberge.

October 31st.—One man had had smallpox in his house. I detained him till he got a telegram from Dr. Laberge, saying he was perfectly free.

November 3rd.—Fumigated a number of pieces of baggage from Montreal.

November 4th.—Fumigated one trunk from suspicious place.

November 5th.—Fumigated one trunk and vaccinated the party coming from infected house.

One man had a bandage on his arm, saying the mark was beneath. He had never been vaccinated; so I operated

November 6th.—Fumigated one piece of baggage from suspicious district.

Arrested three. One submitted at station, one at police station, and one rusticated all night in detention hospital and escaped through window next morning.

November 7th.—Gave four pieces of baggage for fumigation in morning.

Arrested one and fumigated one trunk at night.

November 8th.—Had four boys and one trunk fumigated. No refusals.

November 9th.—Gave one parcel to be fumigated.

November 10th.—Six refused vaccination. Telegraphed, and four police met train. All submitted readily at appearance of police. Had two trunks, one valise and one bundle fumigated.

November 12th.—Sent one to police station. Dr. St. Jean vaccinated him and let him go. Gave two trunks and one bundle to be fumigated.

November 13th.—One refused till the police appeared, when he submitted.

November 14th.—Gave one piece to be fumigated. Put one man in cell over night.

November 16th.—Fumigated three trunks in morning, and one trunk and one valise in evening.

November 17th.—Gave one trunk check to fumigator, but the baggageman refused to put it off, so had to telegraph to have it sent back.

November 18th.—Gave one piece for fumigation. Three got off at Hull who refused to be vaccinated.

November 20th.—One man refused to be vaccinated till police appeared on the scene.

November 21st.—One got off at Hull, refusing to be vaccinated. Gave two pieces of baggage for fumigation.

November 23rd.—Gave one trunk for fumigation.

November 24th.—Man and woman got off at Hull who came from suspicious house, but as no police met train could do nothing.

November 26th.—Two got off at Hull to evade vaccination. As no police meet trains here we can do nothing to those who get off there.

December 2nd.—Gave three trunks to be fumigated. Scarcely have any difficulty in vaccinating now, and not the one-quarter the number to vaccinate.

December 2nd. Two men refused. I telegraphed for police, but none came. So I seized both myself and kept them for half an hour, when they submitted.

December 8th.—Took two men and put them in lock-up for forty hours before they submitted. They had been in the employ of the company and had furnished certificates, but they were bogus.

December 12th.—Had to arrest two men, but both submitted before going to police cell. Fumigated trunk and valises.

December 18th.—This day I had trouble with an Ottawa lawyer who refused to give evidence by arm of successful vaccination.

December 21st.—Fumigated baggage of a woman who had smallpox during the epidemic. There are scarcely any to fumigate or vaccinate now.

December 25th.—Fumigated two trunks and vaccinated a child whose mother had smallpox.

January 1st.—Fumigated a couple of valises of suspicious cases, had to call police before could get possession, and then had to catch the man running away with a valise.

January 3rd.—Had to arrest one man before he would submit to vaccination.

January 12th.—One woman refused to have herself and child vaccinated, so telegraphed and had them detained by police till I came on next train, when she submitted.

January 13th.—Gave one piece of baggage for fumigation.

January 14th.—Had considerable trouble with a couple, but when Ottawa was reached they yielded, and their baggage was fumigated.

January 18th.—One refused till Ottawa police appeared, when he readily complied; also fumigated his baggage.

January 21st.—Scarcely any to vaccinate or fumigate. One refused till police appeared.

January 25th.—One refused and was being taken to police cell when he consented.

January 28th.—A case similar to that on 25th.

January 29th.—Had a good deal of trouble in getting a party of shantymen going to Michigan, to be vaccinated, but ultimately they complied.

REPORT OF J. C. BURT, M.D.

My duties during the first two weeks were to inspect passengers travelling between Montreal and Ottawa on the C. P. R., and to vaccinate all those who did not show recent marks of successful vaccination. I met with considerable resistance but generally managed to overcome all obstacles before our destination was reached. I was subsequently appointed Inspector of the vessels going to Ontario *via* St. Lawrence. Considerable trouble was experienced in executing the work, more especially amongst the crew. One crew positively refused to submit to the law, so I sent word to Dr. Hamilton, of Cornwall, to quarantine the vessel and men until they were all properly vaccinated and the vessel thoroughly inspected. On one or two occasions I had to stop some goods which had been manufactured in Montreal and had not secured our certificates of freedom from infection. This had a beneficial effect on all persons sending manufactured goods from Montreal by these boats. Those engaged in securing the freight for the Merchant's Line of Steamers were very glad to have me come and inspect their vessels, as it gave a great sense of security to all those on board the vessel, as well as relieving the minds of the inhabitants at places where these vessels called. In most instances I gave the captains of the vessels certificates of freedom from infection, and some of them had these certificates sent on and published in the daily papers before arriving at their destination. After navigation closed, I was on duty on the G. T. R., vaccinating passengers and inspecting their luggage going to Ontario. Very often our policemen had to remove people from the train, as they refused to be vaccinated. In all cases they were compelled to submit to the law before being allowed to continue their journey. At Lancaster I fumigated the baggage of all persons residing on infected streets in Montreal, or who came from other infected districts outside of Montreal. Sometimes there were people who attempted to get off at flag stations in order to evade the law. In these cases I called upon some of those on the train whom I knew, to assist in keeping such persons from leaving the train until they complied with my request. One day in returning to Montreal, a lady very heavily veiled, and who acted rather peculiarly, got on the train at Summerstown, a small station on the G. T. R. in Ontario. I was requested by the conductor to examine this person and see what was the matter. To my surprise it turned out to be a case of smallpox in the papular stage. Passengers in the car were removed and the doors locked, while all who required it, were vaccinated. The patient was taken to Montreal and removed to the Hospital, and the car fumigated. I went back to Summerstown, saw the Medical Health Officer who was very anxious to do everything that was necessary. He ordered all those places where the patient had been to be properly fumigated and the people vaccinated, and carried out general vaccination. Doubtless, owing to the precautions taken, not one new case was reported in that district. I had considerable trouble with one Dr. A. M. Ross of Montreal, who showed me a mark of vaccination which he stated had been performed within the last twelve months. He afterwards stated in the public press that it was performed fifty-one years ago. Fortunately, however, there were two other persons on the train who heard him, and who have made affidavit as to Dr. Ross's statement as given by me.

I would conclude by stating that the majority of passengers were well pleased with our work, and a large number were always anxious to see us on the trains as they said they felt safer.

J. C. BURT.

REPORT OF DR. J. C. HAMILTON, MEDICAL INSPECTOR AT CORNWALL CANAL.

(*This report for one week, sufficient to show amount and character of the work performed, is given.*)

OCTOBER 30TH.

Received orders to-day from Dr. Covernton to quarantine canal. I at once notified all forwarders that all boats passing westward either into Canada or the U. S. would be subject to medical inspection, and if necessary vaccination of the crews before entering Cornwall Canal. I also secured the services of my sanitary inspector to relieve me of part of the night watch, as it has been absolutely necessary to keep continual watch day and night (Sundays included), not being able to tell the moment a boat would arrive and require immediate inspection; and as the fall weather has been very rough, it was necessary that navigation should be delayed as little as possible. Not having received a note book and passes until November 2nd, it is impossible for me to give reports previous to that date; suffice it to say that the canal was under strict inspection day and night previous to that date.

All inspections, both day and night, and all certificates granted, have been made and given by myself. During the thirty-two days of inspection the weather was of the roughest kind, and as it was impossible to know the moment I would be required I had to be on duty continually, all inspections having to take place during the time vessels were locking through the canals. On several occasions you will observe that I have had to resort to *force* in order to compel the crews to submit. As to the number of vaccinations made, it is impossible for me to say positively, owing to the difficulty at all times to keep track of those I vaccinated, but can say that all the vaccine supplied me during the inspection was used for that purpose. There were no regular hours, as the report will show that I was liable at all times to be on duty, and therefore had to hold myself in constant readiness to attend to the work.

Nov. 3rd.—Propellor *Clinton* passed up to-day; inspected crew and steamer, found all correct, and gave it a clearance certificate; also received instructions to-day to be on the look out for propellor *Ontario*, crew thirteen; vaccinated eight; five presented evidence of recent vaccination; time *8 p.m.* Owing to injury to lower canal, navigation has been delayed.

Nov. 4th.—Tug *Dolphin*, crew seven, all vaccinated, and had certificates from health officer; gave clearance certificate *10.30 a.m.* Barge *Buckley*, crew seven, five vaccinated successfully; two were vaccinated to-day. Inspected her to-day, and gave certificate; time *5 p.m.*

Nov. 5th.—Tug *Glide*, passed up, crew eight; all successfully vaccinated; gave certificates, time *10 a.m.* Barge *Nebraska*, crew four; all presented evidence of successful vaccination; gave certificate, time *11.30 a.m.* Barge *Colborne*, crew four, passed up, all successfully vaccinated; gave certificate, time *12 a.m.* Barge *Eagle*, crew four; one refused to comply and submit to vaccination, and was sent back into Province of Quebec before the boat passed westward; time *2 30 a.m.* Tug *Georgiana*, crew eight, all presented evidence of successful vaccination; time *1 p.m.*; gave certificate. Barge *Ontario*, crew four, vaccinated one; gave certificate; time *1.30 p.m.* Barge *Eugene de Mars*, crew four, all successfully vaccinated; time *2.30 p.m.*; gave certificate. Barge *V. Paradis*, crew four, one vaccinated; gave certificate; time *3.30 p.m.* Barge *Arthur P.*, crew four, all passed; gave certificate; time *3 p.m.* Propellor *Ontario*, crew eighteen; nine presented marks of smallpox and also good marks of vaccination, five presented marks of successful vaccination, four marks of recent vaccination; the captain also presented an Ontaio Health Officer's certificate of clearance for crew; gave fresh certificate on passing through canal; time *11.30 p.m.*

Nov. 6th.—Inspected and passed tug *Plover*, crew four; time *2.30 a.m.*; gave certificate. Propellor *Celtic*, passed up, crew fifteen; all presented certificates except one, and one passenger, who got on at Valleyfield; examined them and gave certificates, also gave certificate to Captain; time *5.30 p.m.* The weather is very bad, which makes the arrivals irregular.

Nov. 7th.—Propellor *Dominion*, crew fifteen ; vaccinated three, gave certificates ; also gave certificate to one passenger : time *11.30 p.m.* Propellor *California*, passed up ; crew twenty, all well, vaccinated, and carried certificates, except two, to whom I gave certificates ; also gave a clearance to the steamer, time *4.30 a.m.* Propellor *Persia*, passed up, crew twenty ; gave certificate of clearance ; time *2.30 p.m.* Steamer *Alexandria*, crew twenty ; inspected her and gave certificate ; time *1.30 p.m.* Propellor *Algoma*, Fort Covington to Massena, N.Y., passed up, *4.30 p.m.*; gave clearance.

But greater, even, than the dangers averted which inspectors detected in the persons of those who had had the disease, were those avoided by the supervision exercised in the granting of certificates to those merchants who in good faith carried out the plan of having a physician visit the homes of their employees, vaccinate all members of their families, and detect any instances where smallpox was in the houses, and see that these work-people were isolated and that none went to business until the patients were removed or recovered and the house and clothing disinfected. Remembering that some 20 000 certificates were issued, which does not, however, in the least degree give an indication of the number of dangers possible since one order would include a case of goods, in which there were dozens of pieces of goods, it speaks volumes for the good faith with which the eighty (80) merchants who shipped to Ontario carried out their promises to our inspector of having these inspections thoroughly performed, of having all the work done on the premises, and of having all pieces of goods in any way exposed to contagion previously fumigated, when I am able to state that, of all the outbreaks which have up to the present time occurred in the Province, one only seems to have been directly traced to a particular piece of cloth bought from a Montreal house.

Further, however, than both of these measures for the protection of our people was the prophylaxy afforded travellers westward, who might have been exposed in innumerable ways to the germs of the disease, either in their persons or their clothes while in Montreal, by vaccination, either performed on the trains or which the presence of inspectors on the trains had caused them to have performed before making their journey. As stated by Dr. T. S. Covernton in his report, for a time 150 vaccinations were daily performed, while the number which had been performed, either very recently or within a few years, is represented by the total number of passengers, westward, *i. e.* some 110,000.

The shipment of rags, which must always be considered a danger of the most positive character, was entirely prohibited, while ready-made clothing came within the inspection of merchandise already referred to.

That the dangers actually present to the Province may be to some degree appreciated, it is proper to state here the extent of the epidemic which was present in Montreal. The first cases occurring in April, there were in Montreal alone, up to the end of December, the following number of deaths, as given in the Dominion Vital Statistics.

Deaths from Smallpox in Montreal from June to December, 1885.

Month.	Male.	Female.	Totals.
June	16	6	22
July	22	30	52
August	130	120	250
September	443	386	829
October	661	582	1,243
November	328	299	627
December	76	76	152
Total	1,676	1,499	3,175

Taking Dr. Morson's experience of 15,000 cases of smallpox at the London Smallpox Hospital, as giving the true average of deaths amongst unvaccinated persons, viz.: 35 per cent., and assuming that all who had the disease and died in Montreal were unvaccinated, there were in all over 9,000 cases, as calculated from the number of deaths. As there was a considerable number, however, of persons who had been vaccinated in youth, or imperfectly, who had the disease, the total number of cases which were actually infective-centres must have been considerably more than the above number of cases, and illustrates the danger, which can be further realized when I state that, according to the records received by Dr. T. S. Covernton from the Montreal Health Office, there had been cases in 3,145 houses up to November 21st.

Numbers even in this way fail to strike one as does the following, which was the record of a single street, not the worst, at the time I speak of. The table shows the street in blocks of 10 numbers, and in houses whose numbers are given smallpox occurred.

		200½	307½, 308, 310	404	
15, 17, 19	112, 115, 116 117, 119	219	315, 316, 317, 325, 327, 329	417, 419	
26½		229		425, 430	
39	136, 138, 139	231, 235, 236 240	335, 339	432, 439	437
41, 47½, 50	143, 144, 147	247, 248, 249 250	348, 348½	447, 448	445
51, 54	158, 158½	252, 253, 254	360		
65	156, 165½, 167, 169½	262, 266, 269 270	361, 362, 364 367	461	
71, 73, 80	173½, 175½	273, 275, 277 280	374, 379	473	
		280½, 281, 281½ 285	383, 384, 386		
	193, 195, 198 200	293, 294, 295, 296, 297, 298½	390, 399		

Should it be thought that there was no great likelihood of persons from so many houses transmitting the disease to this Province, inasmuch as most of them were Frenchmen, the reports of the train inspectors regarding the number of these which travelled on both the C. P. R. and G. T. R. will promptly convince to the contrary. Furthermore, the facts gathered from the Hungerford outbreak point to the readiness with which the disease spreads even amongst the people of sparsely settled townships. From the houses, some 30 in all, in Hungerford, in which cases occurred, the disease was conveyed to some eleven townships in all.

That these sources of infection in Montreal, so numerous in their character, would have produced their natural fruit in Ontario, had that comparatively unrestricted communication gone on which, till the month of December, was permitted between Montreal and other parts of the Province of Quebec, is seen in the fact that from statistics gathered by the Provincial Board of Quebec, some 90 places outside of Montreal have had cases of smallpox, and that the mortality from this cause outside the city has at least equalled that in Montreal. This is still further demonstrated by the fact that while, at the end of August, only some 332 deaths had occurred, there had been by the 15th of September, the time at which the Ontario inspection may be said to have been thoroughly organized. 17 introductions of the disease, as will be gathered from the following reports received from M. H. officers of local boards in those places where cases have occurred :—

SUMMARY of Smallpox cases in Ontario up to Dec. 31st, due to the Montreal Epidemic.

Names of Counties and Places therein.	Total Number of Cases.	Number of Separate Importations.	Where from and how Infected.	Date of Importation.	Deaths.
Renfrew County—Renfrew Village	1	1	Montreal	November 19th	0
Renfrew County—Horton Township	3	Unknown	Unknown	November	0
Renfrew County—McNab Township	9	1	Horton Township	November	2
Carlton County—Ottawa City	18	8	Montreal	Sept. 3rd to Dec. 5th	2
Carlton County—North Gower Township	5	1	do	October	0
Russell County—Clarence Township	1	1	do (near boundary line)	January, 1886	0
Russell County—Cambridge Township	1	1	Polycarpe	January, 1886	0
Russell County—Plantagenet N. Township	3	..	Not stated in report	November	0
Prescott County—Alfred Township	1	1	Montebello	November	0
Prescott County—Hawksbury E. Township	4	1	Regaud	December	0
Glengarry County—Kenyon Township	2	2	Montreal	Sept. 1st and Nov. 2nd	1
Stormont County—Cornwall Town	6	1	do Was in hospital there	August 20th	2
Stormont County—Cornwall Township	7	2	do Late arrivals	Oct. 24th and Nov. 5th	2
Stormont County—Dickinson's Landing	7	1	do	Dates not stated	1
Grenville County—Cardinal Village	3	1	do	Beginning of Sept	0
Leeds County—Brockville	2	1	do	October and November	0
Lanark County—Perth	1	1	do A cattle drover	October 14th	0
Northumberland County—Trenton	2	1	do A sailor on boat plying between there and Trenton	November	0
Peterboro' County—Peterboro' Town	1	1	Montreal By playing with letters and papers that came from friends in that city	October 23rd	0
Durham County—Port Hope	1	1	Montreal	October	0
Durham County—Pontypool (Manvers Tp.)	11	1	do Brought in woollen goods to a tailor's shop	Dec. 8, '85, to Jan. 4, 86	1
York County—Toronto City	27	5	do 3 before inspection, 1 after	August and September	..
York County—Parkdale	1	1	do Got disease while cleaning a railroad car	December	0
Halton County—Trafalgar Township	1	1	do Exposed to clothing of a Montreal man	November	..
Halton County—Georgetown Village	1	1	Toronto Was in infected house there	December	0
Halton County—Nassagaweya Township	1	1	Montreal—Supposed to have been brought by a doctor in his clothing	December	0
Wentworth County—Hamilton City	11	2	Montreal—1 direct, and other was infected by goods in cases which he opened	15th Sept. to 1st Nov.	4
Lincoln County—St. Catharines	11	1	Montreal A sailor on propellor "Cuba"	Sep. 1, first case; others not given in report	1
Waterloo County—Berlin	2	1	do Infection brought in clothing from there	Dates not given	0
Middlesex County—London City	2	1	Hamilton—Was in contact with infected parties there	October	0
Totals	146	42		Before inspec'n, 17 cases After do 25 "	16

In all these instances of imported disease it will be found as indicated in the preceding tabulated reports, that the cases were directly exposed to the infection in Montreal, and took ill after their arrival in Ontario. In some instances, such as the Hamilton case where the exposure was immediately preceding departure from Montreal, vaccination on the train might have prevented the smallpox taking effect.

Comparing these with the number of those cases subsequently imported into the Province, we cannot but be struck with the fact that, of the few subsequently imported most of them had been vaccinated on the train (*vide* Renfrew, Perth, etc.) but at a time some days subsequent to the exposure, and that in all these instances the disease was varioloid.

The cases arising from infection conveyed, is instructive, as showing how every measure short of complete interdiction of intercourse with Montreal, would have failed to prevent several of the outbreaks. (See statement in previous Table of causes of outbreaks in Peterborough, Trafalgar, Parkdale, Pontypool, etc.) It will be gathered, then, from a perusal of the above table, that relatively the number of cases directly occurring from infection from Montreal subsequent to the 15th of September, is very small as compared with the cases occurring in Montreal before this date; since, out of a total of 3,175 deaths to the end of December, not more than about one-sixth had occurred up to Sept. 15th, while, of the the cases directly traceable to Montreal, 17 had occurred before this date and only 25 after it. It would be unfair to claim that the immunity of Ontario, subsequent to this date, was was due wholly to the medium of our staff, since, it must not be forgotten, that from early in October, *vigilance*, *vaccination*, *insolation*, and *disinfection* sub-committees acting in conjunction with the Local Board of Health of Montreal, were potent agencies in lessening the dangers to which this Province was exposed; but it is fair to state that this activity of Montreal was only brought about as was expressed by an Inspector of the U. S. Marine Hospital Service "by outside pressure brought to bear in the premises," and in so far as this pressure was from Ontario, it was brought to bear in the only possible way, viz: By taking the firm position that no goods or persons bearing infection be knowingly allowed to enter the Province, and by adopting the measures already alluded to at length, to see that this intention was duly carried into effect.

To make plain how economical to the Province, not including the saving of life, is this method of suppressing contagious diseases, as compared with that of allowing the disease to indiscriminately enter the Province, to be introduced into the Municipalities and then afterward subdue it, we have only to refer to the expenditure connected with the Hungerford outbreak last winter. The actual expenses there were nearly $12.000, of which the Government, by a motion of the House, paid one-third. At that time I calculated that the expense of each case amounted to about $60, and comparing this with the actual *per capita* cost of $138.09, for 788 cases in Illinois showed that it was an extremely small expenditure. The difference however, was very largely due to the fact that, in Illinois there were a large number of distinct outbreaks. Thus for 306 distinct outbreaks, there was only a total of 2,010 cases, or 6.4 cases to each outbreak. Now judging from the expenditures obtained in connection with several outbreaks, in one instance two cases costing $1,200, it is probable that the actual cost per case for the outbreaks springing from the Montreal epidemic, would approximate the $138.09 of the Illinois outbreaks. On this basis 128 cases have cost our different Municipalities $17,675.52.

It does not require much argument to show how, apart from the constructive cost, in loss of business, time etc., to Municipalities and individuals, which in Illinois was calculated at $230.00 per case, a small Provincial expenditure has saved the Municipalities thousands of dollars and many lives.

The following Table has been prepared from returns up to date of actual cost in municipalities which have had cases of smallpox :

TABLE I.

Shewing cost of cases in the various municipalities of Ontario in which Smallpox appeared, and the cost per case.

Total Cost.	No. of Cases.	Cost per Case.
$15,496	128	$121

TABLE II.

Showing the total cost, and the cost per case of the epidemic in Hungerford Township in 1884.

Total Cost.	Total No. of Cases.	Cost per Case.
$11,665	202	$57 74

It may be here remarked that the difference per case in the cost of Table I. and Table II. is greatly owing to the fact that in the instance of the municipalities, very large expense was incurred in the erection of smallpox hospitals, etc., which did not occur during the Hungerford epidemic.

TABLE III.

Showing the total cost and cost per case in Illinois outbreak, 1881, 1882.

Total Cost.	Total No. of Cases.	Cost per Case.
$108,688 09	788	$138 09

TABLE IV.

Showing what the cost would have been for Table I. and Table II., taking as a basis the cost of the epidemic in Illinois, the total constructive cost being $149,165, and constructive cost per case $230.

Total Cost in Hungerford, 1884.	Total Cost in the Municipalities in 1885.
$38,237 00.	$24,230 00

It will not fail to be of interest to introduce here a comparative statement which I have been able by the kindness of H. S. Crewe, Esq., to obtain from the reports of the Registrar-General's Department, of the number of counties which had smallpox in them during the outbreak in 1872-73-74. It will be remembered that nothing in the shape of Local Boards of Health existed at that time, and that whatever work was performed in stamping out the smallpox, was done by committtees of the councils, or by boards of private citizens.

TABLE shewing number of Deaths from Smallpox as given in Registrar-Generals' Reports.

COUNTIES.	1872.	1873.	1874.*	Total.	1883.	1884.	First half of 1885.	Last half of 1885.	Total
Brant	3	2	.....	5	None	None	None	.....	0
Bruce	10	.....	.....	10	do	do	do	.....	0
Carleton	33	3	13	49	do	do	1	2	3
Essex	23	1	.....	24	do	do	None	.....	0
Frontenac	5	.....	.....	5	do	do	do	.....	0
Grey	2	.....	1	3	do	1	do	.....	1
Haldimand	1	3	.....	4	do	None	do	.....	0
Halton	6	.....	2	8	do	do	do	.....	0
Hastings	.....	.....	2	2	do	53	do	.....	53
Huron	1	3	2	6	do	None	do	.....	0
Lambton	5	.....	.....	5	do	1	do	.....	1
Lanark	6	.....	1	7	do	None	do	.....	0
Leeds and Grenville	2	.....	.....	2	do	do	do	.....	0
Lennox and Addington	1	.....	3	4	do	4	do	.....	4
Lincoln	1	.....	.....	1	do	None	do	1	1
Middlesex	7	3	.....	10	do	do	do	.....	0
Norfolk	8	2	.....	10	do	do	do	.....	0
Northumberland and Durham	4	.....	1	5	do	do	1	1	2
Ontario	1	.....	.....	1	do	do	None	.....	0
Oxford	6	7	7	20	do	do	do	.....	0
Peterboro	.....	.....	1	1	do	do	do	.....	0
Prince Edward	.....	.....	1	1	do	do	do	.....	0
Peel	1	.....	.....	1	do	do	do	.....	0
Perth	.....	1	7	8	do	1	do	.....	1
Prescott and Russell	8	3	3	14	1	None	do	.....	1
Renfrew	.....	1	2	3	None	do	do	2	2
Simcoe	1	.....	.....	1	do	do	do	.....	0
Stormont, Dundas and Glen	4	1	10	15	do	do	do	6	6
Victoria	.....	.....	1	1	do	do	do	.....	0
Waterloo	2	3	4	9	do	1	do	.....	1
Wellington	.....	.....	3	3	do	None	do	.....	0
Welland	4	5	.....	9	do	do	do	.....	0
Wentworth	3	6	1	10	do	do	do	4	4
York	39	28	47	114	do	1	do	3	4
Total	187	72	112	371	1	62	2	19	84

* No report was published in 1875.

It must be evident from this exhibit that without any special centre of infection in the Province, similar to that of Montreal, or that of Hungerford last year, there were in 1872, 1873 and 1874, 775 cases of smallpox in twenty-nine counties of the Province with 371 deaths; while with two such extended centres of infection as those referred to, in the Province during the same year, and with the means of communication between different parts of the Province greatly facilitated by means of railways, there have been, as already shown, only 10 counties in which cases have occurred, while the total cases during 1883, 1884, and 1885, in Ontario have been 250, and the total deaths, inclusive of those dying in Hungerford in 1885, from the outbreak at the end of 1884, have been but 84 deaths.

There is nothing in the whole history of smallpox during the year, which will illustrate the advantages which attach to the establishment, under compulsion, of Local Boards of Health and, under the presence of contagious disease, of the appointment of Medical Health Officers, the whole being in intimate relations with a central health authority, so well as does the foregoing comparison.

What the internal organization was, and what the preparations made to resist smallpox were, may, to some extent, be realized, by the following facts, most of which were contained in the Chairman's statement, published along with that of the Chairman of the Quebec Board, in their circular letter published in the end of November last:

(Appendix B. to Circular letter.)

Number of Local Boards of Health, in Ontario - -	563
" Medical Health Officers, - - - -	283
" Sanitary Inspectors, - - - - -	160

STATIONS :—

Places west of Toronto to Sarnia, per the Grand Trunk Railway, having Local Boards, Medical Health Officers and Sanitary Inspectors :—

Weston—Medical Health Officer and Local Board.
Brampton—Local Board.
Georgetown—Medical Health Officer and Local Board.
Guelph " " "
Berlin " " "
Stratford—Local Board.
St. Mary's "
Lucan "
Ailsa Craig—Medical Health Officer and Local Board.
Parkhill—Local Board.
Thedford—Medical Health Officer and Local Board.
Sarnia—Local Board.
Point Edward—Local Board.

From Hamilton to Windsor, per Great Western Division of Grand Trunk Railway :—

Dundas—Medical Health Officer and Local Board.
Paris—Local Board.
Woodstock—Local Board and Sanitary Inspector.
Ingersoll—Local Board and Medical Health Officer.
London East, Town—Local Board and Medical Health Officer.
London, City of " " "
London West, Village " " "
Glencoe—Local Board.
Bothwell "
Thamesville "
Chatham " and Medical Health Officer.
Belle River " " "
Windsor " " "

Towns of importance between Toronto and Niagara Falls Town :—

Toronto—Medical Health Officer and Local Board.
Oakville—Local Board and Sanitary Inspector.

Burlington—Local Board and Medical Health Officer.
Hamilton " " "
Grimsby " " "
Beamsville " " "
Merritton " " "
St. Catherines "
Niagara Falls, Town—Local Board and Sanitary Inspector.

Places on Niagara River :—

Fort Erie—Medical Health Officer and Local Board.
Niagara Falls Village—Medical Health Officer and Local Board.
Niagara Town " " "

Places east of Toronto on Grand Trunk Railway :—

Whitby—Medical Health Officer and Local Board.
Oshawa " " "
Bowmanville " " "
Newcastle " " "
Port Hope " " "
Cobourg " " "
Colborne "
Brighton "
Trenton—Medical Health Officer and Local Board.
Belleville " " "
Napanee " " "
Kingston Medical Health Officer and Local Board.
Gananoque " " "
Brockville " " "
Prescott " " "
Cardinal " " "
Iroquois " " "
Morrisburg " " "
Cornwall " " "

These Boards and Medical Health Officers did not exist to act only after smallpox had made its appearance, as some persons would seem to think is the only time that such are required ; but they, in many instances, took prompt measures, where such had been previously neglected, to have vaccination systematically carried on, and in some instances erected or had set apart buildings for the purposes of smallpox hospitals.

This showing must be considered most satisfactory, in view of the fact that, with a Vaccination Act on the statute book for many years, it had never previously been enforced in a single city of the Province ; and that since its provisions have been extended so as to include every municipality, a number of rural municipalities had, even before the extension of the smallpox epidemic to its subsequent dimensions, taken advantage of it to provide general vaccination free for all applying for it, by establishing vaccination stations at convenient points.

In the absence, however, of any legal provisions by which the Provincial Board is empowered to have vaccination systematically carried out, and in the absence of any legislation by which the carrying out of such a Vaccination Act is made a part of the duties of Local Boards, it is not surprising if information regarding all the places, which may or may not have carried out vaccination in some systematic way be wanting further than statements that vaccination had been very generally carried out. Almost all annual reports of our Local Boards can give no definite information on the subject. Comparing statements of the vaccinated in those places, where it is stated *so many* vac-

cinations have been performed with the population of the municipality, I have found that seldom has the first in anyway approached the second. However, it may be fairly said that the general fear arising from the epidemic has given a very great impetus to vaccination in Ontario, and further that all that is required now is a proper Vaccination Act, including thorough arrangements for its enforcement, in order to place our whole people practically beyond the possibility of an epidemic of smallpox occurring amongst them.

As an evidence that the work has, however, been generally satisfactory, it is pleasing to be able to state that at the date on which this is being written, February 8th, 1886, there is not a single case of smallpox in Ontario.

The last cases, those of Pontypool, Toronto, and Tyendinagea (Eagle Hill), are convalescent and set free from quarantine. That we will have no more cases is perhaps too much to expect, but that they will be promptly dealt with, and the disease prevented from extending beyond first families, the experience of the past year may fairly entitle us to assert.

Two only of the staff of our inspectors remain doing duty at Ottawa and Lancaster, and with the daily lessening danger from Quebec, writing at this date, it is most probable that another fortnight will see the Province return, as far as smallpox is concerned, to her usual condition of freedom and comparative immunity from its ravages.

The following are condensed replies to the several questions contained in a circular sent to Medical Health officers in places in Ontario having had smallpox during 1885.

Name of Reporters.	1st.—Give the origin of each case which has occured during the year.	2nd.—State the number of days after invasion, at which it was reported to the Local Board, or Medical Health Officer.	3rd.—Describe in detail the action taken as regards isolation, disinfection and vaccination of the case, and of the family in every instance.	4th.—State whether the compulsory provisions of Section 8 of the Small-pox Regulations have been carried out.	5th.—Give the number of vaccinations, as far as known, performed in your municipality during the year.	6th.—Give any other facts of importance, or interest, which you may deem desirable.
Dr. J. Clark, M. H. O., Peterboro', Dec. 5, 1885.	First case, 23rd Oct., 1885, that of a child whose family lived in Montreal a short time previously, and which city no doubt was the source of the disease. The child was in the habit of playing with envelopes of letters which came from Montreal.	I reported to Local Board immediately after discovering the disease on the 23rd of October.	The patient was removed in a couple of days to an isolation hospital which was erected outside the town, and in the meantime the whole family were vaccinated and quarantined.	Yes.	From two to three thousand were vaccinated.	The child recovered, and owing to the prompt measures taken the disease was stamped ont — no further cases having occurred.
Dr. T. V. Hutchinson, M. H. O., London, Dec. 24th, 1885.	First case discovered on 4th of Oct. The man came from Hamilton where four members of his family died shortly after his leaving them to come here. The disease appeared on him 10 days after his arrival here. Second case. A man in same house was attacked 15 days after the first case, the vaccination being unsuccessful.	It was reported at once.	He was removed at once to the small-pox hospital and the remaining males vaccinated, six in number, and the house thoroughly disinfected and placed in quarantine. Second case treated similarly.	Yes, so far as the school children are concerned. Measures will be taken to have compulsory vaccination performed on adults who may require it.	3,225 were vaccinated, many of whom were adults.	Both cases made a good recovery and were discharged. No new cases have occurred.

Dr. David O'Brien, M. H. Officer, Renfrew, Dec. 22, 1885.	First and only patient left Montreal on the morning of the 19th November. I saw him on the same evening and he had marked premonitory symptoms of small-pox.	Same day that he arrived from Montreal where the disease was contracted.	All the family removed next day to a house well isolated. The house they left was thoroughly disinfected, no person being allowed to go near it but those persons employed.	Yes.	Nearly 1,200 have been vaccinated.	The patient made a good recovery; all were vaccinated, and notwithstanding that his wife was in constant attendance on him she nor any of the others did not take the infection.
Dr. P. Stewart, Milton, Dec. 21st, 1885.	The patient was a girl aged 16 who went to visit her uncle who came from Montreal a short time prior to said visit, and my opinion is that he had the disease in his clothing. The uncle and his family had been vaccinated and re-vaccinated successfully, but the girl was vaccinated only when a child and I learn that it was not successful. She took ill 10 days after being at her uncle's.	I saw her on Friday, Nov. 6th, and at once reported to the Board of Trafalgar Township in which she resided.	The room in which patient remained was stripped of all superfluous furniture, carpets, etc., and sulphur burned in it twice daily. She was isolated from other members of the family, excepting her mother, who attended her all through. Other disinfectants were used besides the sulphur, which was continued every day. Vaccination was performed on every member of the family excepting a brother on whom it was repeated without success.	Yes.	About 500 in the Township, and in Milton say 700, making 1200 or thereabouts in all.	I never saw so many pocks on one patient. She was four weeks in bed, but made a good recovery. She will be badly marked however.
Dr. Wm. Canniff, per Dr. Lowe, Small-pox Hospital, Toronto.	1st, Aug. 7, Montreal. 2nd, " 25, from 1st. 3rd, " 31, Quebec Province. 4th, Sep. 3, unknown. 5th, " 16, Montreal. 6th, " 24, do 7th, " 25, unknown. 8th, Oct. 11, from 6th. 9th, Nov. 7, unknown. 10th, " 16, from 9th. 11th, " 17, " 8th. 12th, " 17, " 9th. 13th, " 19, " 11th. 14th, " 30, unknown. 15th, Dec. 5, from bedding.	Generally about the 4th day, although there have been two or three cases which had not been reported for nearly three weeks after infection.	When discovered the patients were at once removed to the small-pox hospital, where they were carefully looked after by the surgeon in charge Dr. Lowe. All persons in the houses in which the patients became infected were quarantined and a system of disinfection carried out under the superintendence of the sanitary inspectors.	It was not found to be necessary to enforce the compulsory vaccination regulations of the Provincial Board of Health, as the people freely came forward for vaccination, which was free to every one asking for it at the various stations in the city.	About 15,000 persons were vaccinated by the public vaccinators, besides probably as many more by private medical practitioners.	Recapitulation of cases — From Montreal, 6; Infected in Toronto, 13; unknown, 8; total cases, 27; died, 3.

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Name of Reporter.	1st.—Give the origin of each case which has occured during the year.	2nd.—State the number of days after invasion, at which it was reported to the Local Board, or Medical Health Officer.	3rd.—Describe in detail the action taken as regards isolation, disinfection and vaccination of the case, and of the family in every instance.	4th.—State whether the compulsory provisions of Section 8 of the Smallpox Regulations have been carried out.	5th.—Give the number of vaccinations, as far as known, performed in your municipality during the year.	6th.—Give any other facts of importance or interest which you may deem desirable.
Dr. Wm. Canniff, per Dr. Lowe—*Continued.*	16th, Dec. 9, from others. 17th, " 9, unknown. 18th, " 9, from others in city. 19th, " 9, do 20th, " 12, his brother 21st, " 12, from others in city. 22nd, " 17, by clothing in shop. 23rd, " 19, Montreal. 24th, " 21, unknown. 25th, Jan. 1, 1886, his sister in city. 26th, Jan. 9, unknown. 27th, " 12, do					
Dr. Robillard, M.H.O., Ottawa, Dec. 1885.	April 16th, 3 cases in one house, origin unknown; 1 death. April 29th, 2 cases, origin in house of first cases where they were boarders. Sept. 11th, 2 cases, origin, Montreal; 1 death. Sept 30th, 2 fresh cases, origin, Montreal. Nov. 6th, 5 cases, origin, Montreal.	In quite a number of the cases several days elapsed before any medical man had notice of the disease, in fact I had one man fined $20 for not notifying a case occurring at his house for seven days after the invasion.	As soon as cases were discovered immediate action was taken by the Board. They were, with the exception of a few, removed to hospital, and the houses in which they were, quarantined and disinfected. Of those who were treated where they became ill their houses were isolated and every-	Compulsion in vaccination was not carried out, but the people were publicly notified of the law on the matter and we had only one case of refusal to comply.	Cannot state the number vaccinated but I am informed by many medical men that they have performed a great many vaccinations, and I should say that the aggregate number is very large.	The inspection under the auspices of the Provincial Board of the trains and passengers coming into Ontario from our sister Province of Quebec was undoubtedly the means of keeping the disease from entering our Province in large numbers of cases. Were it not for this I have no doubt but

Dr. Robillard, M.H.O. —*Continued.*	Nov. 9th, 2 fresh cases, origin from Nov. 6th cases. Nov. 25th, 4 new cases, 1 adult and 3 under 12 years of age. 3 cases had their origin from Montreal, but the 4th, a young English girl, the origin of whose case cannot be discovered. Dec. 5th, 3 fresh cases, 1 from house where the disease was before and the others from different houses. Total number of cases —23.		thing done possible to prevent spread of contagion. Were it not for the energetic measures carried out there might have been a very serious epidemic of the disease.			an epidemic of smallpox would have been raging in many localities this side the border.
Parkdale.	On the 8th of Dec. it was discovered by the Medical Health Officer, Dr. Riddall, that smallpox had appeared in the person of a man living on West Lodge Avenue. The sufferer was an employé of the C. P. Railway at Parkdale. It is thought he received the infection from one of the cars, which had been in Montreal a short time previous.	Only a short time elapsed prior to the discovery of the disease, and then it was at once reported to the Board who took immediate action.	An effort was made through the Local Board of Health of Toronto to have the patient removed to the hospital of the city, but without success. While this negotiation was proceeding the residence of the man as well as several contiguous residences was placed in quarantine. Men were appointed to keep guard in the locality, and the measures adopted were so efficiently enforced that the disease was confined to the one person, who became convalescent in a few weeks and made a good recovery.	Compulsory measures were not resorted to, as it was considered unnecessary to take such a course owing to the fact that the people were glad to have vaccination performed, believing such a measure absolutely necessary, especially as the smallpox had made its appearance amongst them.	The number of successful vaccinations performed is not accurately known but is very large. Numbers of people availed themselves of the offer of free vaccination made by the council; besides, the medical men in their private practice vaccinated very many.	It is creditable to the Board to have to remark that the matter of stamping out the disease was grappled without delay or excitement and successfully carried to a very satisfactory issue.
Dr. J. Mann, Renfrew, *re* smallpox in the townships of Horton and McNab. Jan. 5, 1886.	Three cases of smallpox occurred in Horton Township in November last, and the patients all recovered, and no further cases have appeared in this township. A young man who had been employed at the home of two of the patients in Horton Township returned to his own home in McNab Township, where he became affected with the disease, but as the disease was not suspected at the time to be really smallpox, precautions were not taken to prevent him being visited by others. He visited the house of one of his neighbors, and the result was that nine others became affected, two of them dying. All the neighbors were vaccinated who lived at all convenient to those affected, and all					

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Dr. Mann—*Continued.*	precautions taken to prevent the disease from reaching other families. You will thus see that the disease in McNab Township had its source from Horton Township, but as to the source of the cases in latter place, I have never been able to satisfactorily discover. Others as well as I have tried but failed.					
Georgetown.	It was personally reported to the Secretary of this Board by the Medical Health Officer of Georgetown that a case of smallpox had appeared there about the end of December. The patient had come from Toronto and was a member of a family in which a case of smallpox occurred, but which, owing to its mild character, was for some time mistaken for erysipelas. Fortunately the disease was eradicated and did not spread any further than case mentioned. Vaccination has been carried on very largely and, from this slight warning, the people will in future see the benefit of adopting this prevention.					
Nassagaweya Township.	A case of smallpox occurred in this township and a great many people believe that it was brought from Montreal by a medical man who had been visiting the locality. He had not smallpox himself but may have carried it in his clothing. It was a mild case, however, and was confined to itself. The people were somewhat frightened and a large number were vaccinated.					
Geo. C. Carlisle, Chairman Board of Health, St. Catharines, Dec. 1885.	Early in September smallpox was discovered almost simultaneously in three families. The disease was imported from Montreal by a young man on the Propeller "Cuba," trading between that place and Chicago. 11 cases in all—5 in one family, 4 in one and 2 in another.	They were reported to the Board immediately after being discovered.	The Board had the houses isolated at once and placarded and engaged a physician to attend to the cases. The erection of an hospital for smallpox patients was proceeded with, into which, when finished, the patients were all removed. The house in which the disease first appeared was thoroughly disinfected, and the infected clothing and bedding all destroyed. Every	A public meeting was called and a very large number of persons, mostly children, were vaccinated free, and in addition to this a large number was vaccinated by the doctors of the city.	Cannot give the number, but it was very large.	One case proved fatal, that of a young woman who had never been successfully vaccinated; all the rest recovered and were discharged after being in the hospital 46 days, which was closed. The epidemic cost the city the large amount of $2,377, which might have been to an unknown extent greater but for the energy displayed in carrying out the pre-

			precaution was taken to prevent the contagion spreading and a public vaccinator was appointed.			caution for crushing the disease.
Dr. H. J. Harrison, M. H. O., Township of Cornwall, Dec. 21st, 1885.	7 cases in all, 2 deaths. On 26th October, discovered smallpox on a man who had arrived the day before from Montreal. He was surrounded by 3 or 4 small children and their mother. They were all vaccinated, but in a short time all had the disease (6) but one little boy who bravely resisted it. Some time after this another case was discovered. A girl came from Montreal and stopped at one Perrault's. She confessed having nursed her brother in Montreal during his illness with the disease. She was told to leave, which she did, but not before infecting a little child of Perrault's. She was in the habit while there of nursing and caressing the child. This makes up the seventh case and the second death.	Reported to the Board at once.	The Board had a house taken in a lane in a somewhat isolated position into which the patients were put. Dr. Marquis of Montreal was employed as medical attendant, and Jos. Cherrie as nurse, who took every possible means known to medical sceince for the prevention of the spread of the disease. Too much credit cannot be given to the doctor for the manner in which he acted during this trying ordeal, and Cherrie ably carried out his orders. Sanitary inspector, Mr. A. J. McDonald, gave his valuable assistance in this contingency; also vaccination and all other known precautions were adopted. The clothing, &c., which could not be effectually washed, was burned and the house fumigated.	No.	The people were actually panic struck, and it was impossible to get them to do anything.	No assistance in any shape could be procured from outsiders, and a conveyance could not be got to bring patients to the hospital; and in these trying emergencies, the doctor or his assistants had to carry to the patients everything that was wanted.
Dr. S. C. Potter, Medical Health Officer, Township of North Gower.	A case of smallpox was discovered in a family living in this township towards the end of Oct., but notwithstanding that they were all vaccinated successfully the disease spread over all	The case was reported to the Board, who met on 31st October and passed a resolution ordering immediate and effective precautions to be taken against the spread of the disease.	The family were removed to a separate building and disinfecting, fumigation, and isolation measures at once applied. All the surrounding inhabitants who required vaccination	No, there was not any necessity for force in the matter, as the people were perfectly willing to have such a necessary precaution as vaccination taken.	I have vaccinated 450 myself, and Dr. Kyle has been faithfully at work in the other end of the township, so that I am of opinion that there are very few, if any, remaining unvaccinated who,	Before receiving instructions from the Sec. of the Provincial Board of Health, our Board had effectually moved in the matter and the result has been satisfaciory. Only for the precau-

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Dr. S. C. Potter, *Continued.*	the members—5 cases in all. The first case originated from Montreal and the others from the first.		had it performed, and am happy to say that the disease did not spread beyond the family into which it first came.		really required it under the Act.	tions taken the disease might have spread to an alarming extent.
Dr. McDiarmid, M. H. O. Kenyon Township, Athol P.O., December 21st, 1885.	2 cases. Origin of both, Montreal. Date of 1st, Sept. 29. A boy aged 12 years. Date of 2nd, Nov. 18. A female of 40 years. 1st, discrete type; 2nd, confluent type, death occurring on the 22nd.	Reported immediately after discovery which was a few days in each case after their arrival from Montreal.	The 1st case was removed to a small wood building in the woods, where he and his attendants remained four weeks. The family with whom the 2nd resided removed to another house the day before my visit, leaving the patient's daughter and an aged female in attendance. The members of the boy's family were successfully vaccinated, as was the boy himself. The female patient was in a precarious state of health prior to her contraction of smallpox. Her daughter in attendance showed two	There was no necessity to put section 8 of the Smallpox Regulations into force, as every single inhabitant evinced a prompt desire to be vaccinated, and at the same time studiously avoiding all centres of infection.	I am not in a position to inform you as to the number of vaccinations performed. The greater number were done by laymen, the doctors performing only a comparative few. The *virus* came from various quarters, and some arm to arm vaccinations were performed. One notable case of this system is extant: a father vaccinated his boy with human *virus*, and the patient had periostitis of the femur afterwards, and the father believed that the disease was due to the vaccination.	I have great pleasure in stating that the disease was confined to the 2 cases quoted. In connection with the disease in Montreal and its importation in isolated cases to Ontario, I have no hesitation in saying that the medical inspectors in connection with the Provincial Board have been, and are, the means of preventing in a multiplicity of instances the disease entering our Province. The Inspectors are liable sometimes to be misjudged, but when their work is carefully analyzed, it must be confessed

			good marks of recent vaccination. The usual precautions of isolation, disinfection and vaccination were employed. The attendants of 2nd case were isolated for 3 weeks after her death.			that it is well done; and that the Prov. Board acted most wisely in instituting such a thoroughly preventive system.
Dr. H. G. Lackner, M. H. O., Berlin, Jan. 23rd, 1886.	First case supposed to be contagion conveyed in clothes from Montreal. Second case, direct contact with first case. Both cases over 30 years of age, and had only varioloid.	First case reported 6 days after invasion. Second case four days afterwards.	First case isolated at own house, and a guard put on duty; only one attendant allowed communication. Family vaccinated. Second case removed to pest house, and all members of family vaccinated immediately.	No.	About 1,800 were vaccinated.	The parties who conveyed the disease from Montreal in their clothing had not the smallpox.
Dr. J. D. Keelock, Perth, December 21st, 1885.	One case of smallpox during the year. Disease was contracted in Montreal by a cattle drover who visited that city during the season.	The patient was seen by me two days after his return from Montreal, Oct. 14th, and I noticed that the eruption was well out. I at once reported this case to the Chairman of the Board.	The family consisted of father, mother and a little daughter of about 10 years. The parents had been successfully vaccinated two weeks previously. The child was at once removed and vaccinated, and the premises completely isolated and placarded, with a guard placed on duty. When recovery took place, bed clothing was destroyed and the house thoroughly fumigated and cleansed.	No; but free vaccination was offered by the Council to the inhabitants, who generally embraced the offer. Over 500 were vaccinated at the town's expense.	Would estimate the total number vaccinated at about 1,400, my own being 350.	No physician would assume the duties of Medical Health Officer at the salary offered by the Council $150 per year;—he being expected to attend all cases of smallpox that might occur, act as town physician, and attend every other case of accident or disease during the year. Municipal Councils expect far too much from Med. H. Officers; in fact, more by a great deal than the Health Act imposes on them.
Dr. C. J. Hamilton, M. H. O., Cornwall. December 20th, 1885.	The origin of all the cases of smallpox that occurred here is clearly Montreal. The first case was that of a French boy who	The cases were reported as soon as the nature of the disease was suspected, and the Board at once took active measures	All the members of the two families were vaccinated at once. Three tents were procured, one being used as an hospital, the	Yes, thoroughly and actively carried out.	There have been about 4,000 vaccinated. I must say that the regulations and the assistance of the Provincial Board materi-	The greatest possible care was taken in the burial of those that died, with a view of preventing the disease spreading.

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Dr. C. J. Hamilton, M. H. O.—*Continued.*	had been in a Montreal Hospital for treatment and returned to Cornwall on 20th August. On 23rd August it was discovered that he had smallpox. His father and mother took the disease by infection from their boy. Three cases in this family. The disease entered another family of nine persons, in which there were also three cases, making six in all, two of whom died, one in each family.	for the stamping out of the disease.	other for the members of the first family who were not attacked, and the third for the doctor, nurse and a policeman. In the meantime a comfortable contagious disease Hospital was erected, into which the members of the second family were comfortably installed. Every thing that could be done was done to keep the disease from spreading, and I am happy to say that success rewarded our efforts.		ally assisted in giving confidence to the people, and prevented the disease from gaining headway.	All the effects remaining were effectually destroyed, and the Board supplied the recovered patients and their isolated relatives with new outfits. A regularly qualified physician was engaged to attend to the whole matter of sickness, isolation and disinfection arrangements
Dr. J. Ryall, M. H. O., Hamilton, December 29th, 1885.	First case appeared in the person of a man, aged 50, who had lately returned from the seaboard. He was in the lumber trade and was in comfortable circumstances. He was kept in his own	After being discovered they were immediately reported to the Board, and the people did not appear to have any desire to conceal cases.	The utmost efforts were employed in confining each case; vaccination, isolation, placarding, disinfecting, fumigating and publicly warning the citizens generally were resorted to to this end; and to these	The Board of Health has given every facility to the public for free vaccination, but compulsory measures have not been adopted in this matter. The public school children were given the option to have	I performed 1,362 public vaccinations, 80 of which were repeated ones. In private practice I have done 105, making a total of 1,467. The medical inspectors of schools have reported having done	The isolation of the family of the second case reported was, I believe, the means of preventing the disease spreading, and had the vaccinations performed been successful, probably not more than the first

Dr. J. Ryall. *Con.*	home, which was placarded, isolated and all precautions taken against contagion spreading. Second case was reported on 22nd September—a man 24 years of age. He came from Montreal within 15 days of the disease being discovered, and was at once sent to the Smallpox Hospital. The house was placarded and the inmates warned not to leave the house till at least 15 days had elapsed, but before half the time was gone by, five more of the family took ill with the disease and I had them all removed to the hospital. The disease was well marked when I saw them. Third case was reported on 26th October—a girl named Bolton. Was removed to hospital and family sent to quarantine. No satisfactory origin in this case. She was employed in a rag store. Fourth case reported was that of a little girl, and she was sent to the hospital. It is doubtful, however, whether it was the smallpox she had. Fifth case on 28th October—a boy. He was unpacking boxes that came from Mon-	efforts are due the limitation of the disease.	vaccination performed by their parent's physicians. It was agreed they would do so and hand in certificates of its being successfully performed. Some certificates have been shown, but I think a very small proportion of the aggregate attendance. Most of the children, however, had been successfully vaccinated in early life, but a great many not within seven years.	1,524, which, with mine, would be 2,991. I think that from 4,000 to 6,000 have been vaccinated by all the vaccinators as a whole.	reported would have been serious; but unfortunately the *nurse* failed to do its duty till it was too late.

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Dr. J. Ryall, M. H. O., —*Continued.*	treal, and hence is supposed the cause. Eleven cases in all. Four deaths.					
Dr. Chas. McLellan, M. H. Officer, Trenton, Dec. 17th, 1885.	First case directly from Montreal, by a deck-hand on board the steamer Alexandria. Second case was one of infection from the first, both boarding in the same house. The place was disinfected and the family vaccinated. Efficient precautions taken.	Reported four days after invasion.	The first case, together with the whole family, was removed to an island on the Bay of Quinte, 3 miles from the town, and sanitary policemen appointed as guards, while every precaution was taken to prevent the disease spreading in the town. The second case treated same as first.	Yes.	Over 1,800 were vaccinated.	Both cases recovered, and we were not troubled with any new ones.
Dr. Powers, M. H. O., Port Hope, Dec. 28th, 1885.	One case. Origin—Montreal.	Reported at once.	Family vaccinated and quarantined, guards being placed on house and for two weeks after recovery.	Yes.	2,500.	I think it would be well to make it explicit in the Health Act, who is to pay for clothing, etc., which has to be destroyed.
Dr. Wagner, M. H. O., Dickinson's Landing, Dec. 24th, 1885.	The origin of first case was directly from Montreal and the other six that follow-	They neglected to call in medical aid till 5 days after the invasion, and upon my	Three temporary buildings were erected on an island in the St. Lawrence River for	Compulsory vaccination was not necessary.	I vaccinated about 400 myself but could not give you the total number.	The first case died. The others had a mild form of the disease—the vaccination being

	ed were infected by the first. The first became ill in three days after his arrival here.	finding out the nature of the disease, I reported it at once.	the patients. All the family were vaccinated at once, with the exception of first case.			successful. The nurse who had the smallpox was not vaccinated.
Dr. Forrester, M.H.O., Brockville, Dec. 26th 1885.	Two cases. Both are traceable to Montreal—one directly and the other indirectly. The first case was an engine driver on the G. T. R., between Montreal and here. Second was a female, and is supposed to have been infected by some one visiting her.	First case reported at four days after the infection. Second reported after five days.	As soon as the nature of the disease was ascertained the patient was vaccinated and confined to one room in the house. The others of the family were vaccinated and transferred to a separate part of the house. Disinfectants were abundantly used, all communications from outsiders stopped, and a policeman placed on duty. The second patient was removed to a house outside the town and isolated.	Yes.	I vaccinated 1,307, but don't know how many the other doctors performed.	Both cases have fully recovered and are at their liberty. They had mild varioloid, as they were vaccinated previously. No other cases occurred.
Dr. A. Seguin, M.H.O. for Township of East Hawkesbury, December 17th, 1885.	Came from Piquad, P.Q., nine miles east of St. Eugene, in this municipality. A girl brought it first, and for 8 days afterwards 3 children became infected in the same family. In all 4 cases	Seven days.	Isolated by a card hung over entrance. Disinfectants used were carbolic acid, chloride of lime and sulphur.	No, as the disease broke out in one family only. The people seem anxious to comply with the law and abandon the opposition offered at first.	About 300.	All the cases recovered and none further have been reported.
Dr. T. S. Covernton, Chief of Medical Inspection Staff, Provincial Board of Health. Reports *re* Smallpox in Township of Alfred. Montreal, Dec. 3rd, '85.	As the case of smallpox opposite Montebello was not attended to, and as I heard that no active measures were being taken in Arthur Village, I arranged to go there from Plantaganet. Dr. Pattee went with me, and we saw some of the members of the Local Board of Health and Dr. Lefebvre, the Medical Health Officer. Nothing so far has been done in the matter, but they promised to get a supply of vaccine at once, and begin vaccinating immediately after receiving it. All the population are unvaccinated, and they appear to be very loath in putting the Health Act into operation, but promised to do so, notwithstanding any opposition. I told Dr. Lefebvre to take sulphur and fumigate the house at St. Thomas, 10 miles distant in same township, and to give the people full instructions what to do. If these instructions are properly carried out there is not much likelihood of the disease spreading.					
Dr. T. S. Covernton, *re* Smallpox in Township of Clarence, Jan. 14th, 1886.	Smallpox having been reported to have made its appearance in this township, and fearing that active measures would hardly be taken for its suppression, I visited the locality and found the people much opposed to the establishing of a local Board of Health for 1886, and I think it will be necessary for the Provincial Board to enforce the powers given it by the Health Act, and through the Lieutenant Governor in Council have a Board formed. I ascertained that very many of the children attending school had not been vaccinated. I had a consultation with Dr. Des Rivieres, and with Mr. Minard, Clerk of the Municipality. I explained matters to them and the Reeve, whom I also saw. I found that these gentlemen were in favor of vaccination and of adopting other measures for the stamping out of the disease, but would have to await the decision of the new Council, which is to meet in a few days.					

The following are condensed replies to the several questions contained in a circular sent to the Board of Health Officers in places in Ontario having had smallpox during 1885 —*Continued.*

Name of Reporter.	1st.—Give the origin of each case which has occurred during the year.	2nd.—State the number of days after invasion, at which it was reported to the Local Board, or Medical Health Officer.	3rd.—Describe in detail the action taken as regards isolation, disinfection and vaccination of the case, and of the family in every instance.	4th.—State whether the compulsory provisions of Section 8 of the Smallpox Regulations have been carried out.	5th.—Give the number of vaccinations, as far as known, performed in your municipality during the year.	6th.—Give any other facts of importance or interest which you may deem desirable
Dr. T. S. Covernton, *re* Cambridge Township, Jan. 14, 1886.	Hearing that there was a case of smallpox at Casselman in this township, I visited that place. I found that the disease was confined to one house, and that Dr. Boileau, Medical Health Officer, was attending to it. The patient was a boy of about 5 years old, and the disease was rapidly becoming pustular. The family consisted of seven members altogether. Father and mother both had the disease. All the others had been unsuccessfully operated on. The husband and wife were alternately waiting on the patient, and afterwards mixing freely with the rest of the household. I got them to promise that the husband alone would attend, and have himself and patient isolated from all the rest. I also left word for the Doctor to again vaccinate all the children, and recommended a trial of humanized lymph, the bovine having previously failed. The house is watched by a policeman, but certainly there have not been proper precautions taken in the house to prevent the disease spreading. I shall impress upon Dr. Boileau to take all precautionary measures, as there may be yet time, the disease not having reached the more infectious stage. The people are very negligent, and if it spreads to others it will be their own fault. They are well watched, however, and I have hopes that the disease will not go any further.					

Dr. George Brereton, M. H. O., Bethany, Manvers Township, February 4th, 1886.

Name of Patient.	Age.	Date of illness.	Form of Disease.	Recovery.	Death.	Vaccinated.	Unvaccinated.
Etta Douglass	19	Dec. 8, 1885.	Discrete variola.	Recovered			Yes.
Maggie Corbett	20	" 25, 1885.	Confluent "	"			"
Robert Corbett	17	" 25, 1885.	Discrete "	"			
George Douglas	22	" 26, 1885.	" "	"		Yes, 10 years ago.	"
Wm. Douglas	26	" 26, 1885.	Semi-Confluent variola.		Jan. 12, '86.		
James Clark	24	" 29, 1885.	Discrete variola.	"		Yes, 14 years ago.	"
Mrs. Wm. McRoberts	24	" 31, 1885.	Semi-Confluent variola.	"			"
Martha Clark	20	" 31, 1885.	Discrete variola.	"			
Arthur M. Roberts	6	Jan. 3, 1886.	" "	"		Yes, 4 days before illness.	
James Corbett	23	" 3, 1886.	" "	"		Twice, years ago.	
Wm. McRoberts	35	" 4, 1886.	" "	"			"

Dr. George Brereton, M. H. O.—*Continued.*	I believe the true source of the disease is to be attributed to woollen goods brought from Montreal, during the epidemic in that city. On the 21st November, and a few following days, Mr. Murray, Tailor, suffered from symptoms of smallpox. No eruption except a few rose-colored spots, appeared. He had been previously vaccinated twice with success. The next case was Etta Douglas who came to the shop to work and was taken ill on the 8th December. Mary Brown, another employé, also took ill and suffered with intense headache for four days. Was not vaccinated and is insusceptible. Miss Crozier came to work on 3rd December, and was taken ill on the 19th with all the symptoms but the eruption, which did not appear. None of these cases, except Etta Douglas, consulted a physician, and I had to discover the facts for myself. I was called on to attend Miss Douglas on 13th December, her case being the first to come under my notice, which I at once pronounced variola. The next to suffer was the family of Robert Corbett, who contracted the disease by frequenting infected places before the disease was known in this locality. The Local Board took active steps to prevent the disease from spreading. Infected places were at once isolated, sanitary police appointed and vaccination made compulsory throughout the township. A small hospital was erected three-quarters of a mile from the village of Pontypool. The tailor shop and all other public places of business were disinfected as soon as possible, and all parties who had been exposed to contagion were quarantined till after incubatory stage of the disease. Remarks:—It is a necessity, in order to prevent outbreaks, that the Municipal Council be compelled to appoint a Medical Health Officer at once, and not leave the appointment till an outbreak occurs, as much valuable time may be lost in the matter if the disease has already appeared. It is important for the public benefit that the sources from which vaccine is had be limited, and that arm-to-arm vaccination be disallowed. I have seen many bad results from this mode of operation. A law should be in force compelling every one to be vaccinated by a properly qualified medical practitioner The *virus* should be obtained from some place immediately under the control of the Government.
Cardinal.	There were three cases of small pox here, the first coming from Montreal. No deaths.
Plantagenet North, Township.	This township was visited with the disease and three persons were affected—none of them, however, dying. They were all of a mild type, and their origin or the origin of any of them cannot be definitely stated.

Scarlet Fever.—But few outbreaks of this disease having occurred to the extent of creating fears of an epidemic, the Board has not been called upon to take any action further than in one or two instances advising Local Boards regarding the law bearing upon such outbreaks. In one or two instances, however, Local Boards and Medical Health Officers have shown promptitude in dealing with such outbreaks. As an instance of such activity, the action taken in Fenwick Township may be noted. Dr. W. M. Comfort, Medical Health Officer, writing, stated that "Scarlatina has been lingering for over a year in the municipality, cropping out in isolated cases. Some four weeks ago, however, it broke out quite extensively in a municipality, some six or seven families having it and two deaths occurring. The Local Board have endeavored as best they could to prevent it from spreading, but a difficulty arose. It being near Christmas, several churches and schools were preparing for Christmas Trees. The Board advised them to defer the holding of these, and all followed our advice except one." The Board doubted its power to prevent the entertainment, and wrote to the Secretary of this Board regarding the matter. The Medical Health Officer remarked further: "If we have no power, the Act certainly needs amending in regard to country places, where it is customary for parties to gather from considerable distances to such meetings, and this is the principal source of contagion and danger in sparsely settled districts. An immediate reply will greatly oblige."

The following reply was sent:

OFFICE OF PROVINCIAL BOARD OF HEALTH,
TORONTO, December 22nd, 1885.

DR. COMFORT, Fenwick:

DEAR SIR—You can act promptly under Section 50, Public Health Act, 1884, and prevent the assembling of people. Order by a resolution of the Board in full session, as was done in Hungerford last winter during Smallpox under above section, that the church officers do not open the building for the tea meeting. Should they dare to do so, have a Sanitary Inspector, or any Constable, detailed to arrest any person who breaks your resolution, which is law if properly drawn up (*vide* Section 64, P. H. Act, 1884). You cannot afford to risk anything in the matter.

Your obedient Servant,
P. H. BRYCE,
Secretary.

The following reply was received:

"The members of our Board met with special reference to the case of the Fenwick Church, they having announced their intention to hold a "Christmas Tree." . . . . The pastor of the church was present at the meeting, and finally agreed that the tree would be abandoned—thus saving us from taking summary proceedings."

Yours,
W. M. C.

It is quite apparent from such communications that Local Boards of Health are learning to know that they have duties resting upon them, and that they are yearly seeking to take more active measures as the people are learning to know what the public dangers are and that they can be averted. Action such as that referred to here commends itself most highly, since it is in the truest sense preventive and sanitary.

Measles.—From the monthly reports which have been received from time to time throughout the year, abundant evidence has been gathered that measles has had an epidemic prevalence in a number of localities. The following is taken from the *Monthly Bulletin* for May last. A correspondent writes:

"Zymotic diseases have prevailed since December last, the principal being Scarlet Fever, followed by a very extensive epidemic of Measles of a very bad form, inasmuch as nearly 25 per cent. of the cases were complicated with Capillary Bronchitis and Pneumonia." Another correspondent writes:—Measles of a rather severe type has been very prevalent in this town and surrounding country during past winter and this spring. Quite a number of adults were affected and a good number were seriously ill. In some cases under my own observation tubercular phthisis was secondarily developed, also pneumonic inflammations; some deaths ensued. The attendance of pupils at the schools suffered greatly. In the town schools re-admission of pupils was refused till at least two weeks

after complete convalescence as certified by medical men. Another correspondent writes to the same effect regarding the number of cases of measles which had pulmonary complications."

These remarks made in May, might be repeated with the same force regarding the prevalence of measles toward the end of the year. From such information and experience as has been obtained, it would seem that the contagiousness of the disease prior to its manifestation of a skin eruption, makes it almost impossible to isolate the first case occurring in a house. It commonly attacks all exposed in the same building who have not already taken the disease, and this along with the fact that in most cases, with ordinary care, measles is not a very serious disease, makes the attempts to prevent its spread by persons and clothing, through isolation and disinfection, comparatively few and imperfect. Although it is true that in Toronto and elsewhere certificates are required of freedom from the disease in cases where it is known that the disease has been in a house, yet there are many instances where this fact is not made known by householders, and even if made known, there is no guarantee that disinfectant precautions have been thoroughly carried out in the house where such a child lives with regard to the furnishings or even its clothing. The further fact that in many instances no physician is called in attendance increases very greatly the difficulty of dealing with the disease.

Whooping Cough.—Localized epidemics of the disease have prevailed at different times during the year. The disease, owing to its long continuance presents, through the frequent complications in young children, elements so serious in many instances as to make it very desirable that the law as regards isolation of the disease be carried out. The same difficulties as were referred to in the case of measles are however presented here, to which also that of the long continuance of the disease is added. It would appear as if public sensibilities in regard to the dangers which may attach to the disease, will require to be greatly accentuated before it can be expected that the people of our communities will undertake the serious labour connected with the practical isolation from day to day for a succession of weeks, of any child or children in the houses affected with this disease. In the rural districts this would prove an easy matter, but in the thickly peopled streets of our cities, the task with the present sentiment on the matter, has too many practical difficulties for it to be expected that anything less than severe legal penalties could cause the law regarding its isolation to be enforced.

Diphtheria and Typhoid Fever.—I have placed these two diseases together for the purpose of drawing public attention to them as being ailments coming specially within the domain of preventive medicine, as it has to do with every individual householder in our communities. The year has been marked, perhaps less than is usual, by the presence of outbreaks of these two diseases, not in any case assuming a truly epidemic form, but appearing in frequent outbreaks in localities to the extent of making it possible to characterize the disease as endemic. Without discussing the fine distinctions between these two terms, the limits of which the advance of epidemiological science has served to render more exact, it cannot fail to be remarked that in Ontario, with the advanced views of the medical profession in regard to the isolation of zymotic diseases, the possibility of diseases such as diphtheria and typhoid becoming epidemic, is much less than it is as regards scarlatina, measles, etc. This would appear to be due to an essential difference in the nature of the microbes causing these two diseases and those of scarlatina measles, etc. This appears to me to be due essentially to the fact that while decomposing organic matter outside the human body seems to be a convenient and sufficient culture medium for the germs of diphtheria and typhoid to multiply in, blood or some more or less similar animal fluid is necessary to the free development of the microbes of the eruptive diseases. To speak more generally, the microbes concerned in the decomposition of dead organic matter appear, under certain favouring conditions of the physical system, of climatic and meteorological conditions, to be capable of producing diseases of a septicæmic character from what is commonly termed malaria, through varying grades of morbid conditions to the most malignant forms of diphtheria and typhoid Fever. From Dr. Klein's experiments, the proof of there being several species of microbes in

putrid organic matter capable of multiplication in the human system, has been demonstrated, but were it not so proven by laboratory experiment, every day medical experience would still have pointed to such a conclusion.

Reports from municipal health officers and private practitioners give many illustrations of this.

(a) *Diphtheria.*—Thus: A member of a Local Board wrote in January last, from a western town: "Diphtheria is very prevalent, I hear of it on all sides. There have been many deaths. The medical men of the town and householders generally have almost—I might say entirely—neglected to inform the Board of their cases of disease, and consequently the Board has of itself taken no precautions of any kind to prevent the spread of these diseases, nor has it any official knowledge that the medical attendants in the various cases have taken any precautions, to that end. I entered in the complaint book a specific case of a milk-vendor sending milk from his house, during the time that his children were down with Diphtheria (one of his customers lost a child, and likely to lose another from the disease) and the result was a notice to the Inspector, to stop people who had the disease in their houses from selling milk. This was all very well but the Inspector had no means except hearsay, of knowing the houses the disease is in. The Board also instructed the Public School Teachers to send home any children attending classes who may come from infected houses, and the Teachers are in the same position as the Inspector."

From reports from another western town, I take the following illustrative and pointed statements:

"A few months ago there were several cases of Typhoid Fever of a bad type in town, two deaths occurring in the one family afflicted, yet the proper precautions to prevent the spread of the disease were not taken by the Board of Health. Now that a family of children are all down with a malignant kind of Diphtheria (one having died this week) the same neglect is apparent."

"At the Council meeting on Tuesday evening, Dr. ———— stated that the refuse of the fruit factory on ———— street was probably the cause of a great deal of the sickness in that part of the town. The Board of Health have the power to deal with the matter, and they should attend to it at once. They are the responsible parties in all such cases."

"On Christmas night a three-year old daughter of T. ————. died of Diphtheria. The child had been ill some time before medical aid was summoned, and then it was too late. Four other children in the family have since been taken down with the disease, two of whom are now out of danger, and the others are doing as well as can be expected. We regret that all necessary precaution has not been taken to prevent the disease from spreading. A grave responsibility rests on the Board of Health in this matter, and prompt measures should be taken to prevent access to the house by others than those mentioned in the Act."

Another illustrative case, from a northern town presenting no special characteristics, other than showing dead organic matter in a common form, is here given: "On receipt of your letter the Board met, and the next morning inspected six houses, three of which they directed the secretary to notify the people to vacate, as they were not fit for habitation. The cellars contained not only decaying vegetable matter, but also stagnant water, which owing to the absence of any drainage system in the town, is difficult to drain."

From a village in the suburbs of Toronto the following facts, regarding an outbreak were gained by personal observation. One house in which the disease was most severe in its septicaemic effects was situated immediately contiguous to a cemetery, had a slaughter-house where many animals are killed almost across the street from it, while the water used by the family was obtained from a well on a lot on the other side of the graveyard, and on which lot a number of pigs were feeding in a pen close to the well. At another house where a death had occurred, the house water was got from a barrel sunk in a springy place at the bottom of a hill on the small lot, the house being on the higher ground, and the house refuse and organic accumulations around the doors naturally found their way to the side of the hill. Other cases probably originated through contagion from infected families.

Examples might be enumerated indefinitely, illustrating the facts that dead organic accumulations are the predisposing cause, of diphtheria outbreaks, and are quite in keeping with the fact of the well-known contagiousness of the disease, since it is quite evident that in their effects microbes cultured in dead organic matter, and in the fungoid exudations of mucous membranes would be equally capable of developing disease if introduced into the blood through either the digestive or respiratory tract or abraded surfaces. From such probable facts it appears to me quite evident that radical cures can be wrought in the direction of destroying the endemicity of diphtheria and typhoid, and of lessening outbreaks of them, only by unremittent and persistent endeavours, to not only teach the public what the many conditions are which favour the occurrence of these diseases, but also to obtain rigid municipal regulations regarding the soil on which houses are erected, the manner of their construction, and the means to prevent organic accumulations on and in the soil surrounding the house and source of water supply. There can be no doubt that proportionately to other diseases, diphtheria and typhoid are more prevalent in towns without sewerage systems, old villages and country places than it is in cities with properly constructed sewers and well plumbed buildings; and when it is remembered that many of the buildings throughout rural districts are wooden, with foundations of the same, we cannot fail to appreciate how necessary it will be for Local Boards to be placed in a strong position, in order to lessen the evils growing out of this old time condition of affairs.

As to the measures reported to have been taken by Local Boards, in regard to isolating cases of diphtheria, it may be said, that a decided progress in their thoroughness is evident. The following instances may be given to illustrate this: On the 11th a telegram was received from the Secretary of the Local Board of Bobcaygeon, as follows:—

"A number of deaths from diphtheria at Kinmount. Some parties from here are there having access to parties afflicted. Can we prevent their returning here?

"J. H. THOMPSON,
"Secretary."

The telegram was answered in the following terms:—

OFFICE OF PROVINCIAL BOARD OF HEALTH,
TORONTO, December 12th, 1885.

J. H. THOMPSON, Esq., Secretary Local Board of Health, Bobcaygeon.

DEAR SIR,—Your telegram *re* diphtheria was received yesterday, and in reply beg to draw your attention to sections, 50, 51, 52 and 53, "Public Health Act, 1884," which apply to the case cited by you. The law as it now stands, gives you ample power to take all precautions necessary for the prevention of the spread of this, or any other contagious disease.

Your obedient servant,
P. H. BRYCE,
Secretary.

A subsequent letter explained the circumstances and the action taken by the Board. Parties having a sick sister in Kinmount went there and found her dying of diphtheria. The Local Board of Bobcaygeon learning this, telegraphed to the Kinmount Board, asking whether the parties who had gone to Kinmount had been in infected houses, and, if so, to not allow them to leave Kinmount until properly disinfected, and supplied with a certificate from the Medical Health Officer to this effect; also to telegraph the Bobcaygeon Health Board when such parties left for home. The Kinmount Board not having complied with all these requests, they returned with certificates that they had been properly disinfected and free from the germs of the disease. The Bobcaygeon Board was not satisfied with this, and placarded the house, and ordered them to refrain from mingling with the general public. Their refusal caused much trouble, which was finally overcome.

At Bradford, where the disease has broken out at different times in almost epidemic form, the Local Board, and especially Dr. Taylor, Medical Health Officer, have been most active in causing the isolation of cases, and the improvement of sanitary surroundings and interiors of dwellings. It has not, however, been accomplished without some firmness and determination as considerable opposition to such decided measures was shown.

In Chatham, Hamilton, Guelph, and many smaller places, the system of reporting contagious diseases is in operation, and the placarding of houses with diphtheria has become the rule. What such towns need along with such measures, in order to practically banish diphtheria from their midst, is a system of sewers well constructed and ventilated, and with house drains and plumbing well constructed and trapped against sewer gas. The present defective and incomplete sewers, with intermittent flushing, are doubtless much more dangerous than the surface disposal of slop water in gutters would be.

(*b.*) *Typhoid*—Remarks made in the beginning of this section apply to typhoid equally with diphtheria. It may be true that it seems, on the whole, to have a more marked prevalence at that season of the year when ground water is low; but in towns and cities, its incidence in the fall of the year is not so sufficiently marked as to throw a veil over the real fact of its being caused, in most instances, by sewer gas in those cities possessing a pure water supply. Outbreaks which, during the year, have had an epidemic character, have not prevailed in many localities; but numerous outbreaks of an endemicity, and a number of others with cases so close as regards to time and locality such as to point to a common origin, have made their appearance in different parts during the year.

Amonst the most extended of these outbreaks was that in the Townships of Sombra and Moore, lying along the St. Clair River, south of Sarnia. Isolated cases, at first sight sporadic, had appeared in these townships from August of 1884 onward throughout the year. Doubtless many of the cases were of this character, and were readily accounted for from the fact, that the water supply of many houses was obtained from a surface well dug out of the black soil, made up very largely of *humus*, the decay of which would pollute the water in the autumn, and tend to set up serious diarrhœal troubles. A number of the cases, from evidence obtained, seemed to have occurred from contagion.

During the winter the presence of a number of cases along the river marked an evident tendency in the disease to localize itself. There were three possible causes of the spread of the disease, viz.:—(*a*) contagion; (*b*) vegetable organic matter carried down by the streams and deposited in the lagoons, numerous along the east bank of the river at this part; and (*c*) sewage of Sarnia and Port Huron. It would, perhaps, be difficult to say that any one of these was the principal cause of the outbreak which, being present throughout a severe winter and extending into spring, was marked by an unusual severity and malignancy; but it is quite probable that in the order of enumeration each of these causes was most prominent as regards time. Certainly after the frozen streams had ceased pouring their organic debris into the St. Clair in large amounts, there continued to be poured into the river the sewage of Sarnia, which, being carried down by the water flowing beneath the ice, was practically unoxidized and in the same condition at points five and ten miles down as when polluting the river at Sarnia. The epidemic gradually died away after the ice in the river had broken up, and the inland spring freshets had ended.

The presence of a number of cases in Penetanguishene, in such close proximity as to suggest a common cause, led to an investigation by your Secretary, which was interesting as illustrating the theory that under conditions where the system is being poisoned by animal matter of a non-specific kind—*e. g.*, impure well water—it would seem only necessary for an exciting cause to be introduced to cause specific disease. Such would seem to be the conclusions resulting from the following facts. On the hillside, sloping northward toward the bay, the town of Penetang is for the most part situated. There are several streets, the main street, leading up the incline, and a number of cross streets running around the hillside. On one of these latter most of the cases occurred; in some five or six houses close together, all on the upper side of the street. Their rear premises with wells, water closets, stables, poultry houses, etc., are therefore on a higher level than the houses. As many of the houses are wooden, with partially decayed foundations, it will not be difficult to understand the amount of decaying organic matter which, in many cases, undoubtedly drains into the wells. Above this street were several others, the drainage from the premises along which was toward the first street referred to. On the lower side of this street was a semi-public well, the water of which was used by a number

of the people in infected families, it being reported to be especially clear and pleasant to drink. Near where it is dug was said to have been an old stable. Whether rightly or not, its water was suspiciously connected with a number of cases of typhoid, as regards the using of the water and the outbreak of fever in the different houses. A further investigation of the surroundings of the little town, revealed the presence of organic matter to such an extent as to make it a matter of little wonder, that typhoid was present. The main sewer had connections with it from water closets in a large hotel and other houses; and these, which had most intermittent water supplies, were in a condition most dangerous to the health of the occupants of these dwellings. The description of the surroundings of Penetanguishene is that of many of our small towns, where crude attempts have been made at introducing the conveniences of a water carriage system of sewerage, without the precautions so necessary thereto. There are no places where more alarming outbreaks of diphtheria and typhoid have been known.

A severe outbreak of typhoid was reported by the Medical Health Officer of North Norwich, where a number of members of a family were ill with typhoid, and were, owing to the reported doubtful nature of the cases, and the consequent danger of infection through the general mingling of friends by nursing, etc., there was a likelihood of the disease extending.

A case illustrative of how typhoid is spread, and how controlled by an active Local Board of Health, is reported by Dr. Yeomans, of Mount Forest. He says: "A case occurred here which demonstrated to the public the admirable working of 'The Public Health Act.' A man had peritonitis, from which he recovered in a few days, but typhoid fever which had set in remained and continued. He lived in his house along with two daughters, eldest 15 years. The house contained very little furniture and was in a filthy condition. They had one cow; the milk was kept in filthy vessels. In fact it was a genuine typhoid fever nest in every respect. After four days the girls were tired out nursing and one of them developed symptoms of typhoid. The Local Board of Health had been duly notified under clause 49. They were now called together by the chairman and made fully aware of the circumstances and general condition of things. The man owned the house he lived in and had means; he had refused to employ a nurse, and was rapidly becoming worse and incapable of doing any business, in fact was more or less delirious. No one would offer to pay a nurse as there was very little personal property. Individuals had contributed small sums, and also had offered to come and sit up at night to take care of the sick ones. But in this case, cleaning, disinfecting and nursing were required, in order to accomplish anything. Under clauses 41, 42, 43, 25 and 17 of the Act, the Board stepped in and took charge of the patient and family; provided and paid a nurse, cleaned and disinfected the house by order, supplied all necessaries, and in fact transformed a house which was fast becoming a prolific centre for the spread of typhoid into a sanitary paradise from which rays of sanitary light were shed all around. The man is recovering and the girl has escaped true typhoid; no charitable and self-sacrificing neighbors were exposed, and everything is in good shape. Disinfectants were properly and regularly used during the fever. The public are pleased at the result. The bills will be paid by the Local Board of Health and collected out of his property, which will leave, when sold a margin to his credit. The folly of allowing one and another of the neighbors to take charge and nurse the family is quite apparent. The Local Board were not aware of their powers until called together and the clause was pointed out to them."

The difficulties and dangers from epidemic diseases when present in unorganized localities is abundantly illustrated in the following letter, addressed to the Attorney-General:

CALLENDAR, Sept. 10th, 1886.

To the Honourable the ATTORNEY-GENERAL, Toronto:

DEAR SIR,—Great anxiety exists in our village, caused by the rapid spread of Typhoid Fever.

We believe the disease was brought into the place by navvies employed in the construction of the Northern and Pacific Junction Railway, as there were no cases amongst the inhabitants before fever patients were brought from a distance and placed in the temporary hospital used for the sick employees of the said Railway.

The hospital referred to is on the main street, and almost in the centre of the most thickly populate portion of the village, and now within a radius of twenty rods around the hospital there is only one inhabite

house, in which the fever has not got a foothold, and in one case has resulted fatally. There are no water closets, or in fact any sanitary preparations in or about the hospital, and now the smallpox is working up the C. P. R., and reached Pembroke. We feel it is necessary to take some steps to have the hospital removed to a reasonable distance from the village, before any small-pox patients are placed therein.

We have less than two hundred inhabitants, and there are, we believe, twenty-two cases of fever in the village, not counting one dead, one removed to Hamilton, and two recovered. We think you will admit that we are justified in feeling alarmed.

We are not incorporated, and we do not see anything in the Public Health Act that would authorize us to proceed in the premises as an unincorporated community under the circumstances. The people naturally look to us to take some action in the matter, and we take the liberty of appealing to you for advice and instruction.

Hoping to receive an immediate reply, we remain,

Respectfully yours,

(Sgd.) A. B. SHANNON, } Justices of the Peace.
(Sgd.) GEO. MORRISON, }

To this copy the following letter was sent:

TORONTO, 17th September, 1885.

SIR,—In reply to yours of the 10th inst., addressed to the Attorney-General, I beg to say that, under 47 Vic., cap. 38, sec. 29 (Ont.), the Medical Health Officers of the township can compel the proper cleaning of the hospital premises and the removal or destruction of the excreta. There is no authority for compelling the C. P. R. Company to provide an hospital for its men, but I would imagine if the local authorities represent the matter properly to the Company, they would be willing to facilitate any reasonable arrangement that may be desired. The centre of a village seems a dangerous place for an hospital for people afflicted with Typhoid Fever, especially where there is an absence of proper sanitary arrangement.

Your obedient servant,

(Sgd.) J. G. SCOTT,
Deputy Attorney-General.

A. B. SHANNON, ESQ., J. P., Calander.

Local Health Organization.—The work of the year as regards local health work must be regarded as eminently satisfactory. Not only have municipalities very generally, I might say almost universally, carried out the law requiring the establishment of Local Boards, but very many of these Boards have been engaged energetically in health work.

The following is a statement of the relative advance in reported organizations over last year:—

1884.

MUNICIPALITIES.	Local Boards.	Medical Health Officers.	Sanitary Inspectors.
Townships	218	30	19
Incorporated Villages	113	50	60
Towns	50	18	39
Cities	10	5	9
Totals	391	103	127

1885.

MUNICIPALITIES.	Local Boards.	Medical Health Officers.	Sanitary Inspectors.
Townships	384	170	88
Incorporated Villages	122	85	59
Towns	53	32	26
Cities	11	11	27
Totals	570	298	200

While, as was stated in last year's report, the progress over the previous year in these local health organizations was very marked, it will not fail to be noted that an advance has been yet further made during 1885. The special point to be noticed in this progress is the great increase in the number of executive officers of Boards. The total of 298 Medical Health Officers is most gratifying, while, if that of the relative increase in Sanitary Inspectors is less so, it must not be forgotten that in many rural municipalities the local physician being in a specially favourable position for examining into all health matters, often acts in the double capacity of Medical Health Officer and Sanitary Inspector.

Another reason, doubtless, may be fairly given for this splendid showing of Medical Health Officers, viz.: the recent smallpox epidemic in Montreal. The Act of 1885 being specially directed to the control of epidemics, naturally made prominent those provisions intended to supply local needs for controlling epidemics. The first of these was the appointment of a Local Medical Health Officer. The fears of smallpox becoming epidemic in this Province made the advisability of having these officers seem so necessary that the circular issued by the Provincial Board, urging their appointment, was very generally complied with in those places where the appointments had not been already made. While it is true that the greater part of the work of these officers in many places was the carrying out of the vaccination provisions of the Health Acts, and taking charge of arrangements for treating smallpox, it will only require a perusal of any of the reports of Boards and Medical Health Officers, found in Appendix XII., in order to see how extended has their work in many instances become. Of the hundreds of Annual Reports received, it has been possible to select a few of the more extended ones, as those which seem to best illustrate the work which an active Board is expected in the interests of the public health to carry on. The number of matters which have been most intelligently dealt with in many cases is surprising. From the St. Catharines' report, a city where a year or two ago there was almost nothing of health work done, I learn (1) Scavengers were appointed to do work under contract, and for the six winter months of 1884-1885 continued the emptying and cleansing of cesspools and privy vaults: (2) the Sanitary Inspectors in May, made a house to house inspection, and reported a great improvement in the condition of yards, cellars, etc; (3) slaughter-houses and cattle-byres were frequently inspected, and thus caused to be kept clean, and the cattle in good condition; (4) the lanes and alleys in the rear of all business streets have been much improved in cleanliness since the Board's organization owing to the Inspectors preventing in large measure the deposit of garbage, etc., in them: (5) a sewer in a most needed locality was constructed during the year, with catch-basins and traps at street corners, etc., and the proper ventilation and flushing of it being provided for; (6) smallpox having appeared, a physician was appointed to attend to cases; these were isolated, and their houses placarded and disinfected, and as soon as possible within a few days after second cases had appeared, a hospital was erected for their accommodation; (7) a public vaccinator was appointed, and a large number of persons vaccinated free of charge; (8) houses with cases of scarlet-fever, measles and whooping-cough were placarded, and every precaution taken to prevent their spread, as soon as the cases were reported by physicians: (9) the Board have determined to prosecute in the case of every physician where they have evidence that he has not reported cases of infectious disease; (10) the report contains the list of all cases of infectious diseases reported to the Board; (11) also, the mortuary report for the whole year the deaths being 157 for the city, or about fifteen per cent. of population.

It will not fail to be noted in the perusal of this model report that it has been prepared and signed by the Chairman of the Board; and it may fairly be said that the report is complete. Every phase of the public health work has been taken up and dealt with, and with practical results in the instance of smallpox, of which I am personally aware, which simply could not be surpassed, judged by the only true standard—the immediate purging of the town from the disease. It may further be taken as an illustration of what a public minded and prominent non-professional citizen, having the confidence of the town, can do, when placed in the strong position of receiving practical support from the mayor and city council. While I have singled out a single report as illustrative of how

thoroughly the spirit, as well as the letter, of the Health Act is carried out in many places, I have by no means intended to minimize the work done in other cities and even townships. In some the difficulties in dealing with different matters are boldly set forth in the reports to the Councils, and remedies as promptly suggested. The practical difficulties in carrying out the work in almost every case point to the defective nature of the Act which defines the powers and duties of the Boards. In one the report points out how ward influence in the council delayed for over a month the construction of a proper smallpox hospital, with a number of cases present in the city; others point out how time and again the Boards, recognizing in their brief existence the practical value of earth closets in lessening the privy nuisance, have petitioned the councils in vain to pass by-laws making the introduction of earth-closets, under the supervision of the Boards, compulsory, and others again urge the use of city water, where possible, on the ground that the absence of earth-closets, and the saturation of the soil, made the well waters impure.

By reference to these various difficulties in practical sanitation, pointed out in different annual reports, it will be noticed that they are those which, in the two last Reports of the Provincial Board have been again and again referred to. Doubtless the progressive sanitary intelligence of different communities is placing Local Boards yearly in stronger positions, but the progress would be greatly accelerated if the points were gained :—

(*a*) Of obtaining, wherever necessary, a Medical Health Officer, and in every municipality a Sanitary Inspector.

(*b*) Of having a money grant sufficient to provide for such officers doing efficient work, and for such necessary expenditures as may be required, as indicated by his inspections.

(*c*) The placing of Boards in a position to do more than recommend to the Council, the carrying out of certain work, *i.e.*, to carry it out by its own officers without the delays incident to a reference in all cases to the elective body. In every case where Boards have been placed by public-spirited councils in their proper position, health work has been carried on with enthusiasm and success; and in those cases, where councils have given their Local Boards nothing more than a nominal existence, the executive labours may be characterized in much the same terms.

Anomalies in the various Health Acts, and even between clauses of the same Act are pointed out in many Annual Reports; but their character is already too well known by the Board to make any further reference to them desirable.

In the circular issued by the direction of the Board, to various persons in official positions and to medical men, with a view to obtaining their opinions on the various questions, a very large number of answers have been received. From the replies, it is quite clear that public opinion very generally favours the entire separation in membership between councils and the members of Local Boards; and further that Boards of a more permanent character than at present, are thought likely to perform more efficient work.

The tabulated summary of questions, and the replies thereto, are herewith appended :

SUMMARY :—Replies to Circular *re* the formation of Local Boards of Health, dated November 23rd, 1885.

(Total number of Replies to following Questions, 644.)

Correspondents.	1.—Do you consider that the appointment of Local Boards of Health should rest with the Municipal Councils?	2.—Do you think it desirable that members of Local Boards of Health should be elected by the people, in the same manner as Municipal Councillors?	3.—Do you consider it advisable that persons should be at the same time members both of the Municipal Council and of the Local Board of Health?	4.—Do you think it desirable that members of Local Boards should serve for a term of years—a certain number of them retiring annually in rotation?	5.—In England, Local Sanitary Authorities are elected for three years from amongst the ratepayers, one-third retiring each year. Do you think this system a desirable one to be adopted in Ontario?	6.—What, in your opinion, is the best way of providing funds for Municipal health work—(*a*) By an annual grant of the Council; (*b*) By accounts of Local Boards for expenditures, being presented to the Council for payment from time to time; (*c*) By a separate annual tax, such as the school tax?
Mayor, Reeve, or Chairman of Local Board of Health..	118 say Yes. 28 say No. 146 Total.	28 say Yes. 118 say No.	84 say Yes. 62 say No.	82 say Yes. 64 say No.	59 say Yes. 87 say No.	26 say (*a*). 89 say (*b*). 31 say (*c*).
Clerk of Council or Secretary of Local Board of Health..	109 say Yes. 33 say No. 142 Total.	33 say Yes. 109 say No.	76 say Yes. 66 say No.	68 say Yes. 74 say No.	40 say Yes. 102 say No.	28 say (*a*). 96 say (*b*). 18 say (*c*).
Doctors *in* connection with Local Boards of Health. ..	97 say Yes. 68 say No. 165 Total.	68 say Yes. 97 say No.	57 say Yes. 108 say No.	130 say Yes. 35 say No.	116 say Yes. 49 say No.	26 say (*a*). 94 say (*b*). 45 say (*c*).
Doctors *not in* connection with Local Boards of Health	46 say Yes. 127 say No. 173 Total.	127 say Yes. 46 say No.	24 say Yes. 149 say No.	161 say Yes. 12 say No.	142 say Yes. 31 say No.	25 say (*a*). 65 say (*b*). 83 say (*c*).
Editors of Newspapers in various parts of Ontario. ..	9 say Yes. 9 say No. 18 Total.	9 say Yes. 9 say No.	4 say Yes. 14 say No.	15 say Yes. 3 say No.	10 say Yes. 8 say No.	3 say (*a*). 8 say (*b*). 7 say (*c*).

RECAPITULATION.

For	379	For	265	For	245	For	456	For	367	For (*a*).... 108
Against	265	Against	379	Against	399	Against	188	Against	277	For (*b*)..... 352
										For (*c*)..... 184
Majority for....	114	Majority against..	114	Majority against..	154	Majority for....	268	Majority for..	90	

Nuisances and *Unsanitary Conditions.*—In regard to their existence, and the action taken with reference to them, it may be said that nothing of a material difference in the nature of any of those dealt with, exists between those of past years and this. The evils attaching to some classes of nuisances have shown themselves most prominently, and reports have been presented to the Board, and representations to the Minister of the Department have been made with the hope of obtaining a remedy for some of the more pressing of these. Of these nuisances, those arising from

(*a*) *Cheese-factories*, may be referred to. In the several special reports regarding them, presented to the Board during the year, the nuisances to be remedied, the difficulties in dealing with them, and suggestions therefor, were fully set forth. The appointment, by the Government, of Mr. J. Robertson, of Harriston, as Instructor and Inspector in connection with cheese-factories, may fairly be expected to produce most beneficial results as regards the removal of conditions, both internal and external to these factories, injuring the good quality of the manufactured article, thereby lessening its healthful value as a food, and affecting unfavourably the purity of the atmosphere in the neighbourhood of the factories by hog-pens connected therewith, as well as the water of the streams, which in many instances has received the waste products from the factory-tanks. The resolution of the Board, authorizing its committee to co-operate with that of the Dairymen's Association, to get out a pamphlet embodying the views of both bodies in regard to the matter, makes further reference to the matter unnecessary.

(*b*) *Slaughter-houses.*—This common source of public nuisance is being yearly better dealt with, on the basis of the public health being of a greater importance than a butcher's convenience. The vested right, which many butchers assume to be theirs, to create nuisances, has been insisted upon in many municipalities, where in former years individual privileges and rights have been paramount. As an illustration of this, I select the following from a letter: "A petition has been circulated by those affected, and presented to the Local Board of Health, and some of its officers have requested the removal of the nuisance, but the request is of no avail, and the Board appears to be impotent to correct the nuisance. More than that, the proprietor declares he will not remove it, and is showing the position he takes by preparing to build a new one on the same lot." . . "It is situated quite in the centre of the village, and bordering on the river which, when the offal is thrown into it, must become filthy in warm weather, when the water is low." Many more examples of a similar character might be given which show the difficulty in dealing with these nuisances. A real difficulty is pointed out by Dr. Harbottle, Medical Health Officer of Burford, who points out that a certain amount of capital would be needed before a butcher could purchase a property even in the country which would fulfil the legal requirements imposed by Schedule A. Were the plan adopted of improved methods of construction of the slaughter house, and of dealing with the refuse, blood, etc., there would not be the same necessities for the limiting clauses of the Act as regards distances; but this improvement must, of necessity, be gradual, and in the meantime the recognized limit of proximity to any dwelling must be insisted upon by Boards.

(*c*) *Knackeries*, or *Fat Rendering Establishments.*—These are a never-ceasing cause of complaint, and may long be expected to continue so. The Hallat factory in Doncaster was this year again made the subject of inspection by me, at the request of the Sanitary Inspector for York Township. The locality of the boiling-house has been changed to the Don flats; while the old factory is to remain as a store-house. While the arrangements in the new building showed a progress over the old crude methods, still there was a great lack of intention to do the best possible for the prevention of a nuisance, evident in the building, which was not completed, or in operation, at the time of my visit. A similar nuisance was saddled upon the Township of Barton, adjoining Hamilton, during the past year by the same firm, and has been the subject of action by the township Board, which is determined to resist any attempt to make of it the dumping ground for Hamilton refuse. Since the time of my correspondence with the Medical Health Officer, steps have, I understand, been taken to have the factory either limited in its operations, or managed

so as not to create a nuisance. A nuisance of an allied character, in the shape of a glove factory, existed in the Township of Nepean, near Ottawa, and became the cause of action by the Local Board. The townships adjoining Brantford, Guelph, etc., indeed most of our cities, have had slaughter-houses, knackeries, and such other adjuncts of increasing population to deal with; and to judge from the nauseating odours after nightfall arising from different establishments of this nature in the neighbourhood of roads leading into Toronto, the necessity for what may be called *suburban* protection is very great. Night-soil men, slaughter-houses, knackeries, bone-boiling establishments make suburban residence most undesirable, and as matters at present stand, it does not seem at all likely that Local Boards, whose members often do not live in the suburbs, will be found sufficient to deal with what are becoming intolerable nuisances. Another element of difficulty in dealing with this matter, is that of the power to alter the law as contained in Schedule A. One or two cases have come up where persons of a local influence in Councils, and even on Local Boards, have endeavoured to perpetuate the existence of nuisances from slaughter-houses, piggeries, cattle-byres, etc. Exercise of the powers contained in clause 37, Public Health Act, 1884, is apparently the only method by which the action thus taken by interested persons can be neutralized in the public interests. The method is cumbrous and expensive, and points clearly to the desirability of the law in such matters being fixed and absolute.

(*d*) *Woollen factories.*—These, which time and again have been the cause of trouble to Local Boards, have, in several instances during the present year, been the subject of correspondence and legal action by Local Boards. The Sarnia case referred to in last year's report, has been for the time, and I trust permanently, settled. In last year's report it was stated. "The case referred to the Provincial Board from Sarnia, is somewhat different, as the dye stuffs are emptied into the bay, at a point close above that whence the public water supply is pumped." Dr. Fraser, the energetic Medical Health Officer, urged action, indicated by me when in the town in April last, in regard to the matter upon the Board. The owners of the factory were summoned before the magistrates, and the case was dismissed, through disagreement between the judges. The action instituted was, however, not allowed to stand, and a second summons on the same charge was served upon the proprietors, and I had been subpœnaed to be present, and give evidence. The owners of the factory yielded, however, before the second trial, and consented to the very reasonable action of the Board, viz., to turn the waste washings, etc. into a convenient sewer, which would carry these products to a point below the water-pipe, before being emptied into the River St. Clair.

From the illustrations herein given, it will not be difficult to see how great the progress in Local Health matters has been, and how rapidly the Local Boards are beginning to take advantage of the many and great powers, in spite of defects, provided by the Health Acts for the removal of existing nuisances. The clauses appended to the Act of 1885, in regard to the limit set to a report of the Provincial Board that a nuisance existed being taken as evidence have been remarked upon in connection with the investigation, found in an appendix to this report on the London Sewerage Investigation, and need no further comment: but as evidenced in the Vankleek Hill nuisance, the Vittoria cheese-factory nuisance, etc., etc., it is seen how ready are offenders to seek protection under such a clause, thereby thinking that the fears of a costly suit will prevent Local Boards from taking action in cases where nuisances of an extensive character exist.

Various other matters of importance have been the subject of official action by your Secretary, the more important of which are contained in appendices to the report.

The work of the year may fairly be considered to have been most satisfactory, whether as regards the relative freedom from epidemic disease, or the progress which has been made in the more prosaic and routine work of local sanitation. The Board's efforts would appear to meet with approval, in every quarter, and while the 650 municipalities cannot yet be said to be clean, official visits to different parts of the Province, make

it abundantly plain that indifference amongst the people has given place to interest in health matters, that municipalities are in many instances discussing, not in haphazard ways, but intelligently, the ways and means for instituting public schemes of sewerage and water supply, and that Canadian Governments, both national and provincial are gradually more and more realizing that the preservation of the health and lives of the people has, in an economic sense, a positive value, and that the degree of the people's health becomes a measure of public happiness and contentment.

All of which is respectfully submitted,

P. H. BRYCE.
Secretary.

PART II.

APPENDICES.

APPENDIX I.

SUMMARY OF MINUTES.—PROCEEDINGS OF THE BOARD.

First Quarterly Meeting of the Board.

(First Session.)

March 12th, 1885.

The Board met at 2 o'clock p.m., the following members being present:—

Dr. C. W. Covernton, Chairman; Dr. Rae; Dr. Oldright; Dr. Yeomans; Dr. Cassidy; Dr. Bryce, Secretary.

The minutes of last meeting were read and adopted. Numerous communications received by the Chairman and Secretary during the past quarter, were read, and the answers to them briefly stated. The Secretary made a verbal statement of the work done during the quarter

The reports of Standing Committees were then proceeded with, when Dr. Bryce presented the report of the Committee on Legislation, which, after reading, was adopted, as amended on motion of Dr. Bryce, seconded by Dr. Rae.

The Board then adjourned at 6 p.m.

(Second Session.)

March 13th.

The Board met at 11 a.m., there being present:—

Dr. Covernton, Chairman; Dr. Yeomans; Dr. Oldright; Dr. Bryce, Secretary. Drs. Rae and Cassidy came in during the session.

The minutes of the last meeting were then read, after which the reports of Standing Committees were considered.

Dr. Oldright read the report of the Committee on Sewage and Water Supply *re* the by-law for establishing the Dry Earth Closet system, presented to the Provincial Board for approval by the Local Board of Galt. The report, after being slightly amended, was adopted. A partial report of the Committee on Epidemics, was read by the Chairman, after which the Board, on motion, adjourned.

(Third Session.)

March 13th.

The Board met at 3 p.m., the following members present being:—

Dr. Covernton, Chairman; Dr. Yeomans; Dr. Oldright; Dr. Cassidy; Dr. Rae; Dr. Bryce, Secretary.

After reading the minutes of last meeting, the report on Epidemics was proceeded with. The report being read and received, the Board went into committee of the whole to consider it, Dr. Rae being in the chair. After discussion, the Board arose and reported the report, as amended, which was adopted by the Board on motion of Dr. Bryce, seconded by Dr. Oldright.

The question of remunerating the clerk of the Meteorological Observatory for his monthly reports for the Bulletin, was next considered, and on motion of Dr. Cassidy, seconded by Dr. Rae, it was decided to pay him $50.

A communication was received from the Local Board of Waterloo Township, and referred to, when the Board were unanimous in the opinion that the efforts of the Local Board in establishing a series of sanitary meetings throughout the township are most commendable, and worthy of being followed by other municipalities.

It was thereafter moved by Dr. Cassidy, seconded by Dr. Yeomans, and carried, That the Board adjourn to 11 a.m. on Saturday

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(Fourth Session.)

March 14th.

The Board met at 11 a.m., the following members being present:—

Dr. Covernton, Chairman; Dr. Oldright; Dr. Yeomans; Dr. Cassidy; Dr. Rae; Dr. Bryce, Secretary.

The minutes of last meeting were read. A communication from the Local Board of Puslinch *re* the establishment of a Vaccine Farm at Agricultural College, Guelph, was read.

The matter of memorializing the Dominion Government was taken up, and the Board went into committee of the whole on the clauses drawn up by the Committee on Epidemics, to be transmitted to the Ontario Government for presentation to the Dominion Government. After discussion the Committee arose, and reported the report as amended, which on motion of Dr. Cassidy, seconded by Dr. Rae, was adopted by the Board, and ordered to be transmitted to the head of the Department for transmission to the Dominion authorities.

The following motion was passed: Moved by Dr. Yeomans, seconded by Dr. Rae, That communications having been received from the Local Boards of Health of the Townships of Waterloo and Puslinch regarding the advisability of establishing a Vaccine Farm in connection with the Provincial Experimental Farm at Guelph, be it therefore resolved, that a committee composed of the Chairman, Dr. Oldright, Dr. Cassidy and Dr. Bryce, be appointed to consider the matter, and, if they think it advisable, bring it for consideration to the notice of the Government.

Several other minor matters of business were discussed, after which the meeting adjourned.

CHAS. WM. COVERNTON,
Chairman.

Annual and Second Regular Meeting of the Board.

(First Session.)

Friday, May 29th, 1885.

The Board met at 11 a.m., the following members being present:—

Dr. Covernton, Chairman; Dr. Oldright, Dr. Rae, Dr. Yeomans, Dr. Cassidy, Prof. Galbraith.

The minutes of last meeting were read and adopted.

Dr. Bryce being absent on urgent business, Dr. Yeomans undertook the duties of the Secretary, *pro tem.*

The Secretary's report of work done during the past quarter was read, received and laid on the table for future consideration.

The Chairman, Dr. Covernton, then read his annual address, after which it was moved by Dr. Cassidy and seconded by Dr. Rae, that the address be received, adopted and printed in the Annual Report.

The Board then adjourned.

(*Second Session.*)

May 29th.

The Board met at 2.30 p.m. and there were present :—

Dr. Covernton, Chairman ; Dr. Rae, Dr. Cassidy, Dr. Yeomans, Secretary *pro tem* ; Dr. Oldright.

Dr. Covernton, the Chairman, read the report of the special Committee appointed to consider the question of a Vaccine Farm.

It was moved by Dr. Cassidy, seconded by Dr. Yeomans and carried, that the report read by Dr. Covernton and also that prepared by Dr. Bryce, regarding the establishment of a Vaccine Farm, be received and adopted.

The Board adjourned to meet at 10.30 a.m, on 30th.

(*Third Session.*).

Saturday, May 30th.

The Board met as per adjournment, the following members being in their places :—

Dr. Oldright, Dr. Cassidy, Dr. Rae, Dr. Yeomans, Prof. Galbraith.

The special report prepared by the Secretary, Dr. Bryce, regarding St. Mary's Cemetery, was read by Dr. Oldright, after which it was moved by him and seconded by Dr. Rae, that,—"This Board having heard the report of the Secretary, hereby sustain the action of the Local Board of Health and Town Council of St. Mary's, and does not consent to the enlargement of the present cemetery ; or to the use for cemetery purposes of the plot, marked on the plan (made by Messrs. Milnes and Hart, and submitted to the Board) as lying about 600 feet south of the corner of Brock and Elgin Streets, being part of lot 19, con. 18.

Further, while it is not within the province of this Board to make any order at present regarding the plots lying outside the corporation limits, it may be advisable to point out that those which drain into Trout Creek, are not desirable, and those draining into the Thames above the town cannot be considered entirely free from objections. The Board considers that it would be desirable, if possible, to obtain a site the drainage of which does not pass through or near the town.

Further,—That the Secretary is hereby instructed to send copies of these resolutions to the Secretary of the Local Board of Health and to the Chairman of the Cemetery Committee.

The motion was carried.

It was moved by Dr. Cassidy, seconded by Dr. Yeomans and carried, that the Standing Committees be the same as last year.

The report of the Secretary *re* the investigation into the cause of typhoid fever in the Townships of Moore and Sombra, was read by Dr. Oldright.

It was thereafter moved by Dr. Rae, and seconded by Dr. Oldright, that the report be adopted. Carried.

Further representations were received from London, since the passage of the resolution by the Board on Nov. 27th, authorizing an investigation, subject to an interview between the Chairman and the Minister.

It being considered desirable to have the authorization in a more compact form, and giving the reasons of the committee authorized to make the investigation, it was moved by Dr. Yeomans, seconded by Dr. Rae and carried :

That the committee appointed to investigate the question of the disposal of sewage, and of the alleged nuisances at London, be and are hereby authorized to employ a shorthand writer to report the proceedings connected with said investigation.

The continued investigation into the Sewerage System of the Kingston Asylum was reported upon by Dr. Oldright, after which it was moved by Dr. Cassidy, seconded by Dr. Rae, and carried :

That the report presented by Dr. Oldright, on the Sewerage System of the Kingston Asylum be adopted, and printed in the Annual Report.

The Board then adjourned.

CHAS. WM. COVERNTON,
Chairman.

THIRD REGULAR MEETING.

(*First Session.*)

AUGUST 4th, 1885.

The Board met at 2 p.m., the following members being present :—

Dr. Covernton, Chairman ; Dr. Cassidy, Dr. Rae, Dr. Yeomans, Dr. Bryce, Secretary.

Dr. Oldright came in during the session.

The minutes of last meeting were read and adopted.

The Chairman made some remarks on the progress of public health matters in European countries and America, especially in regard to prophylaxy against cholera. The conclusions of the International Sanitary Conference at Rome, were also discussed, as well as the defects of the Dominion Quarantine Regulations.

A deputation from St. Marys was introduced at this point, to place the views of various sections of the people before the Board, regarding the proposed new sites for cemetery purposes. The members of the deputation occupied the remainder of the session in presenting their views, after which the Board adjourned.

(*Second Session.*)

AUGUST 5th.

The Board met at 10.30 a.m., with the following members present :—

Dr. Covernton, Chairman ; Dr. Cassidy, Dr. Rae, Dr. Yeomans, Dr. Bryce, Secretary.

Dr. Oldright came in subsequently.

The minutes of the last meeting were read.

The discussion of a proposed motion regarding the registration of plans of house-drainage took place, in connection with the following motion, moved by Dr. Cassidy and seconded by Dr. Rae :—

That any person intending to build shall submit plans of the plumbing and drainage of the proposed building to the Secretary of the local Board of Health, and no construction shall go on until the said plans have been approved of, or until a period of ten days shall have elapsed, from the time when the plans had been submitted, without any objections having been made.

That a record of the plans, and the approval of the same, shall be kept by the Secretary of the Local Board of Health. Carried.

A prolonged interview took place thereafter, with a deputation from St. Marys *re* the Cemetery matter discussed at the last meeting of the Board. The Board practically re-affirmed its previous resolution on the question, as set forth in the following motion :—

"Moved by Dr. Yeomans, seconded by Dr. Bryce, and carried : That this Board having heard the representations made by the deputation from St. Marys, and having carefully considered their statements, see no valid reason for changing their decision regarding the enlargement of the present cemetery.

"Regarding other sites which have been suggested, it is not within the province of this Board legally to make any order."

The Board then adjourned.

(*Third Session.*)

WEDNESDAY, August 5th.

The Board met at 2.30 p.m., there being present, —

Dr. Covernton, Chairman; Dr. Oldright; Dr. Rae; Dr Yeomans; Dr. Bryce, Secretary.

The report of the Committee on Epidemics was read, received, and, on motion, adopted. The report of the Secretary *re* Cheese Factories and the nuisance arising from piggeries in connection therewith. was read, and thereafter adopted.

Dr. Oldright at this stage explained that the cause of the delay in bringing down the report of the London Investigation Commission, was due to the non-receipt of important papers containing evidence.

In connection with the report on Cheese Factories, it was moved by Dr. Cassidy, seconded by Dr. Oldright, and carried: That a committee composed of Dr. Bryce and Dr. Yeomans be appointed to devise some scheme for dealing with the matter referred to in the report.

The Board adjourned.

(*Fourth Session.*)

THURSDAY, August 6th.

The Board met at 10.30 a.m., there being present,—

Dr. Covernton, Chairman; Dr. Oldright: Dr. Cassidy; Dr. Yeomans; Dr. Bryce, Secretary.

The minutes of the last meeting were read, after which informal discussion took place regarding a number of communications.

The following motion was thereafter moved by Dr. Oldright, seconded by Dr. Cassidy, and carried unanimously: That the question of the ventilation of street and railroad cars be referred to the Committee on Ventilation.

The Board then adjourned.

CHAS. WM. COVERNTON,
Chairman.

SPECIAL MEETING OF THE BOARD.

(*First Session.*)

SEPTEMBER 4th, 1885.

The meeting was called by Dr. Oldright, in the absence of the Chairman, to further consider the prepared Smallpox Regulations regarding the prevention of Smallpox.

The following members were present at the meeting:—

Dr. Oldright; Dr. Cassidy; Professor Galbraith.

Dr. Oldright having been appointed chairman, and Dr. Cassidy, secretary, the Board went into committee of the whole to consider the proposed Smallpox Regulations.

The Committee having arisen, it was moved by Dr. Oldright, seconded by Dr. Cassidy, and carried: That the submitted regulations be adopted as amended, and that a copy of the same be sent to the Lieutenant-Governor for his approval. It was moved by Dr. Oldright, seconded by Prof. Galbraith, and carried: That inspectors be appointed for the trains, mailboats and marketboats leaving Montreal, as well as one to do duty in Montreal.

The Board adjourned.

WILLIAM OLDRIGHT,
Chairman.

SPECIAL MEETING.

(*First Session.*)

SEPTEMBER 5th, 1885.

The Board met at 12 o'clock noon in the office of the Attorney-General, being specially called for the purpose of approving the final draft of the Smallpox Regulations. There were present :—

Dr. Covernton, Chairman ; Dr. Oldright ; Dr. Cassidy ; Dr. Bryce, Secretary ; Professor Galbraith.

Dr. Bryce moved, and Dr. Oldright seconded : That the reading of minutes of previous meeting be omitted. Carried. The Regulations *re* Smallpox, as finally amended, were adopted unanimously, on motion of Dr. Cassidy, seconded by Prof. Galbraith.

Dr. Covernton then read his special report regarding his visit to Montreal, with reference to the epidemic, after which it was adopted on motion of Prof. Galbraith, seconded by Dr. Covernton. It was then moved by Dr. Bryce, seconded by Prof. Galbraith, and carried : That the Board endeavour to obtain the services of Dr. T. S. Covernton to proceed to Montreal at once to act as chief Medical Inspector of the Board, and to organize the system of train inspection.

It was thereafter moved by Dr. Oldright, seconded by Dr. Covernton, and carried : That the Board further endeavour to secure the services of Dr. J. S. Bell, Dr. H. B. Aikins, Dr. Kerr, Dr. Natress and Dr. Hewish.

The arrangement and carrying out of these matters having been deputed to the Secretary, the Board adjourned.

CHAS. WM. COVERNTON,
Chairman.

SPECIAL MEETING OF THE BOARD.

(*First Session.*)

SEPTEMBER 14th, 1885.

The Board met at the call of the chair, at 2 p.m., all the members being present.

The minutes of the last regular meeting and of the two special meetings, were read and adopted. A large number of communications were read, the principal ones being those from Dr. T. S. Covernton, who is operating under the directions of the Board. The various important points in those letters were commented upon, after which the following motion was carried unanimously : Moved by Dr. Cassidy, seconded by Dr. Yeomans,—That the public be informed through the medium of the press of the plans of operation, adopted by the Provincial Board of Health, both in Ontario and Quebec, in preventing the importation of Smallpox into this Province ; and that this Board has reason to believe that the method of inspection, as performed by the Medical Officers of this Board, is of a most thorough and satisfactory character. It was further moved by Dr. Oldright, seconded by Dr. Rae, and carried : That the health authorities of the neighbouring States and Provinces be informed of the precautions taken to protect this Province from infection.

The following motion was also carried : Moved by Dr. Cassidy, seconded by Dr. Yeomans,—That in the opinion of this Board, and owing to the medical status of the Medical Inspectors employed by this Board,—their long hours and the onerous duties they have to perform, that the Minister be requested to pay them $10 per diem, especially as the Inspectors state that they feel the previous amount of $8 per diem agreed upon, inadquate, and are likely to resign.

The Committee on Sewage and Water Supply next read its report *re* the London Investigation, after which it was moved by Dr. Oldright, seconded by Prof. Galbraith, and carried : That the report on the London Investigation be received, and adopted as amended, and that five copies of it be prepared for the use of the Committee. Dr. Yeomans then moved, seconded by Dr. Rae : That the sewerage matter of Woodstock, be referred to the Sewage Committee—Carried.

The Board then adjourned.

CHAS. W. COVERNTON,
Chairman.

FOURTH REGULAR MEETING OF THE BOARD.

(First Session.)

NOVEMBER 17th, 1885.

The Board met at 2.30 p.m,, there being present :—

Dr. Covernton, Chairman ; Dr. Oldright, Dr. Cassidy, Dr. Rae, Dr. Yeomans, Dr. Bryce, Secretary.

Dr. Wheeler, Inspector of the Marine Hospital Service, U. S., being present from Buffalo, the Chairman departed from the ordinary routine, and read a report to the Board of his mission to Albany *re* the removal of the quarantine restrictions at Suspension Bridge.

Dr. Wheeler, thereafter, made some remarks explanatory of the action of the United States authorities in placing quarantine restrictions upon the trains, and what the manner of and difficulties in the way of removing the existing quarantine were. He assured the Board that he was so well satisfied with the measures adopted in Ontario, that he would report as favourably as possible to Superintendent Surgeon-General Hamilton in favour of the immediate removal of the Suspension Bridge Quarantine.

Dr. Covernton then read a copy of that part of the joint circular letter, drawn up by him and Dr. Hingston, regarding the measures taken in the two Provinces, after which it was moved by Dr. Cassidy, seconded by Dr. Rae, and carried :

"That the joint letter, which Dr. Hingston Chairman of the Central Board of Health of Quebec, and Dr. Covernton, Chairman of the Provincial Board of Health, of Ontario, have prepared, be issued for publication, such letter having reference to the immunity from small-pox enjoyed by this Province, and to the great diminution of the disease noticed of late in Montreal and Quebec Province, owing largely to the efforts of the Central Board of that Province ; also, that the report of the Chairman, on the success of the efforts made to stamp out the small-pox in this province, and to prevent its introduction into the neighbouring Republic, be received, adopted and published."

Dr. Oldright, subsequent to Dr. Wheeler's remarks, referred to the Ontario system in operation for limiting the disease in the Province, and for preventing its spread into adjoining States.

The minutes of the last meeting were read, after which the Secretary proceeded to read a number of important communications from Dr. J. H. Hamilton and Dr. Rauch regarding the matter of Suspension Bridge Quarantine.

The special report of Committee on Ventilation, on the "Ventilation of Railroad Cars," was read and received. A discussion on the paper took place, when the report, as amended with such alterations or additions in matters of detail as will serve to make it more practical, was adopted on motion of Professor Galbraith, seconded by Dr. Cassidy.

Various other communications, previously read were discussed, after which the Board adjourned.

(Second Session.)

NOVEMBER 18th.

The Board met at 11 a.m., all the members, except Prof. Galbraith, being present.

Numerous communications regarding outbreaks of small-pox, diphtheria, etc., were read, and the action taken regarding them by the Committee on Epidemics reported.

Dr. Covernton also read the contents of a communication from Dr. Austin, of the Marine Hospital Service, at Albany.

A number of important matters, upon which legislation is required, were discussed. Amongst others, Dr. Oldright, drew attention to the desirability of an amendment to Sec. 19, Public Health Act, 1884, and Sec. 3, Public Health Act, 1885, providing that the Chairman may make the temporary appointment and remuneration therein referred to, such action to hold good till the next ensuing meeting of the Board. Exigencies frequently arise requiring that such appointments be made in the intervals between meetings of the Board.

Dr. Bryce referred to the necessity for legislation authorizing municipal authorities to expropriate the land for sites of hospitals for infectious diseases. These various matters were referred to the Committee on Legislation, for action.

The Board then adjourned to meet at 8 p.m.

(Third Session.)

NOVEMBER, 18th.

The Board met at 8. p.m., there being present :—

Dr. Oldright, Dr. Cassidy, Dr. Yeomans, Dr. Bryce, Secretary ; Professor Galbraith.

Dr. Yeomans acted as Chairman *pro tem.*

Mr. McKillop one of the Counsel in the London Sanitary Investigation Case, was present at the meeting and made a statement regarding the wishes of the Health Boards of London West Village, Westminster Township and London Township, as to the action which this Board might take in the Sewage Question.

He said that an order had already been served on the plaintiffs in the case, under Sec. 36, Public Health Act, 1884, and they now ask that the Provincial Board make an order under Sec. 37, requiring the removal of the same nuisance.

After a discussion of the matter it was laid on the table, the final answer to Mr. McKillop to be given by the Board after further consideration of the subject.

It was thereafter moved by Dr. Oldright, seconded by Dr. Cassidy and carried :—

"That this Board cordially invites the American Public Health Association to hold its next annual meeting in Toronto ; and that the delegates from this Board are hereby authorized to make such other representations to the Association as they may deem necessary to secure this object."

It was thereafter moved by Dr. Cassidy, seconded by Dr. Oldright, and carried,

"That the account of J. Hamilton, M.D., of Cornwall, for services as Medical Health Officer in doing Provincial health work, in connection with small-pox outbreak, be paid."

The Committee on sewage and water supply, reported on the matter of Vankleek Hill, which was read and adopted on motion of Dr. Oldright, seconded by Dr. Bryce.

The report of the Secretary on the Peterborough Little Lake Cemetery extension was read, received and adopted on motion of Dr. Bryce, seconded by Dr. Oldright.

The Board adjourned till Thursday at 11 a.m.

(Fourth Session.)

NOVEMBER 19th.

The Board met at 11 a.m., all the members being present except Prof. Galbraith.

The minutes of last meeting were read, and there being no special communications, the matter of representation at the American Public Health Association was introduced, when it was moved by Dr. Covernton, seconded by Dr. Oldright, and carried,

"That Dr. Yeomans and Dr. Bryce be appointed delegates from this Board to the meeting of the American Public Health Association to be held in Washington, D.C., in the second week of December next."

The report of the Committee on sewage and water supply, *re* the sewerage system of Woodstock, was taken up and read, and on motion of Dr. Oldright, seconded by Dr. Yeomans, was adopted.

The report of the Special Committee on cheese-factories was next read, and on motion of Dr. Bryce, seconded by Dr. Yeomans, was adopted.

A long discussion *re* vaccination was introduced by the Secretary reading letter a on the subject from Dr. James Richardson, Toronto. Many answers to a circular were read and commented on, after which the following motion was carried :—

Moved by Dr. Rae, seconded by Dr. Yeomans,

"That the Committee on Epidemics be requested to embody in a report the results obtained from replies in answer to the vaccination circular; and that the Committee again bring the matter before the Minister of the desirability of having a vaccine farm established in the Province of Ontario."

The Board adjourned till 3 p.m.

(Fifth Session.)

NOVEMBER 19th.

The Board resumed its work at 3 p.m., all members being present except Dr. Cassidy and Professor Galbraith.

The minutes of the previous meeting having been read, the following resolution, *re* the London sewage matter, was passed:—

Moved by Dr. Oldright, and seconded by Dr. Yeomans,

"This Board is of opinion that it is better that the action for enforcing the removal of the unsanitary conditions referred to in the letter of Messrs. Hutchinson and McKillop, Barristers, London, should be taken by the parties on behalf of the municipalities of London West, and certain ratepayers of the Townships of London and Westminster who suffer injury therefrom, viz., those who are in the vicinity of them. There is ample provision in the Public Health Acts for their doing this, either as individual ratepayers or through the Local Boards of Health."

"This Board is ready to do anything within its powers for the improvement of the public health, that cannot as well and as easily be done by the Local Boards or the Courts; and it considers that it has been pursuing this course in its recent investigation and report; but it cannot see that in issuing the order asked for, it will be doing anything that cannot as well be done by an appeal to the Courts by the ratepayers and the local authorities. There may arise cases in which delay would be highly detrimental to the health interests of a community, and in which this Board, in the proper discharge of its duty, is bound to act under sub-section 2 of section 37, Public Health Act, 1884; but this does not seem to the Board to be a case of this kind. The Board undertook the investigation, because it was its duty to do so under sub-section 1, section 36; and because it considered it was the best way to dispose of the many difficult questions and conflicting points involved, many of which required expert knowledge for their solution. This Board hoped that an investigation and report might aid the conflicting parties and Courts in disposing of the matter, and that the report might be utilized under section 36, sub-section 2.

"In the last sub-section (sub-section 4, of section 15, Public Health Act, 1885), the word 'report' is not mentioned—the word 'order' is."

The Secretary was instructed to write a letter to Messrs. Hutchinson and McKillop, in the terms of this draft motion.

The matters for publication in the Annual Report, and the matters requiring new legislation, were discussed.

The Finance Committee brought in its report. It was moved by Dr. Bryce, seconded by Dr. Rae, and carried:—

"That the Committee on Publication be directed to prepare a circular to Local Boards, Municipal Councils, and medical men, containing a request that they answer questions therein contained, regarding what, if any, changes in present status and powers of Local Boards they deem desirable, in order to increase their efficiency."

It was thereafter moved by Dr. Oldright, seconded by Dr. Cassidy, and carried:—

"That this Board hereby confirms the appointment of the following Medical Inspectors to co-operate with Dr. T. S. Covernton, Dr. James Bell, and Dr. J. M. Hewish, already appointed:—Dr. J. C. Burt, Dr. J. E. Elliott, Dr. E. H. Williams, and Dr. C. J. Hamilton."

The Board adjourned at 5 p.m.

CHAS. W. COVERNTON,
Chairman.

APPENDIX II.

CHAIRMAN'S ANNUAL ADDRESS.

To the members of the Provincial Board of Health :—

GENTLEMEN,—On the termination of this, the third year's work of the Provincial Board, it is fitting that a retrospect of the subjects that have engaged the attention of the members should form the chief topic of the annual address from the Chair. This work has been entered on from a conviction of its necessity, and with a determination to endeavour to make it such a success that only a carping critic could fairly question. With such a fault-finder it is scarcely necessary for the Board to enter on a defence. Last year on the occasion of my appointment as Chairman I briefly detailed the methods that had been adopted for the diffusion of hygienic knowledge and the accomplishment of practical work by Local Health Boards, the number and efficient working of which will be found detailed in the forthcoming Annual Report. I will, therefore, confine my remarks to a brief account of the proceedings of the Conference of the State Boards of Health held at St. Louis, Mo., October 12th—15th, and at Washington, D.C., December 10th—12th, on matters pertaining to a threatened extension of Cholera to North America, and the action necessary to prevent or limit an epidemic of that disease. As you are aware by a resolution of the Board I was associated with Dr. Bryce as your representatives at St. Louis, and by request of the Minister of Agriculture I acted in the same capacity for the Dominion Government, as also at the adjourned conference at Washington. On presenting our credentials we were duly elected members of the conference and as such entitled to take part in the discussions on the subject above named. On the first day of the meeting a very admirable and exhaustive paper was read by Dr. Rauch, Secretary of the State Board of Health, Illinois, on the spread of Asiatic Cholera in Southern Europe, and of the consequent duty of sanitarians to urge on the Government and on Local Boards of Health the necessary measures for the protection of the inhabitants of the country. On the former the requisite precautions for the prevention of its introduction to our shores, and on the latter its limitation, should it unfortunately effect an entrance by due attention to a pure water and food supply, proper attention to sewage and refuse disposal, and early regard for every sanitary measure were forcibly impressed. He further stated that a knowledge of the history of every previous Cholera epidemic warrants the assumption that it will come, and that we do not know how soon its arrival on our shores may be announced. In the discussion which followed the reading of this excellent paper, of which I have given only a brief idea, with but one exception the opinion of all the representatives of states, cities and towns was in favour of the value of proper quarantine measures in preventing the introduction of infection into sea ports,—not quarantine in the old acceptation of the term of a forty days' detention of the ship, but in the sense of a due disinfection of passengers, crew, baggage, cargo and ship which, properly employed by persons conversant with reliable germicides and due knowledge of the use of them, need not involve a detention of more than a few days. At subsequent meetings of these bodies the subjects of discussion were principally the points specially alluded to in the Report of the Committee appointed the first day of meeting on the practical work required for the prevention of Cholera in this country as an epidemic, viz., International, National, Inter-State, State and Local measures recommending concerted action with the Dominion and British Government, by which American Consuls and English Port Officers of Health shall examine and take such action as they may deem effective and notify the authorities of such Government as has authority over any port to which any ship may

depart for the United States or, Canada. Another point embraced in the report of the Special Committee, presented by Dr. Baker, was the means to be employed for securing a good sanitary condition of the boats engaged in river transportation on the St. Lawrence. The means to be thoroughly successful were such as had been set forth in the paper, read the previous day by Dr. Smart, of the United States Army, which had been inaugurated by the National Board of Health, but which system was now inoperative for want of an appropriation from Congress. They had reference to the prevention of the landing of immigrants at our sea ports until such time as the danger of the introduction of Cholera by them shall have passed. Incidentally the sanitary condition of railway depots and stations, passenger trains, sleeping cars, mail trains, etc., etc., was alluded to, and the necessity for houses of sequestration of the sick and separate ones for the detention of those who had been exposed to diseases being provided at intervals along the line, was asserted. The enforcement of the provisions of a sanitary code on steamboat owners and railroad directors would constitute virtually a school of sanitary instruction for the effectual exclusion of the specific germ of contagious disease, and such enforcement instead of being open to the complaint of travel and commerce being hampered, by giving confidence to the people that health and life had prominent consideration, enforced on the directors, would prevent the dread of travel that so constantly prevails in seasons of epidemic disease. The code should require the grounds and surroundings of depots to be well drained and free from stagnant water, the water closets to be duly inspected and floor, seats and urinals to be kept clean and free from offensive odour: also, the vaults to be frequently emptied and disinfected weekly, either by a saturated solution of the sulphate of iron, or by a solution of bichloride of mercury and permanganate of potash, two drachms of each to a gallon of water, or by a strong solution of chloride of lime.

The report, referring to surveillance of railway trains, recommended that whenever a train departs from an infected station no person be allowed to take passage without the certificate of a health officer, and that his baggage has been thoroughly disinfected before leaving such station. At a point not less than five nor more than seventy-five miles from the point of departure from an infected place, there shall be an entire transfer of passengers and baggage to another train of cars, which train shall never enter an infected district. No sleeping car ought to be allowed to remain in an infected town, nor approach nearer an infected place than this point of transfer. Any passenger car leaving an infected place shall be thoroughly ventilated during its passage to the place of transfer. Upholstered seats of passengers and sleeping cars, and mattresses, and pillows of sleeping cars are to be thoroughly whipped and beaten in the open air so far as practicable, brushed free from all dust and thoroughly aired and sunned at the end of each trip, blankets and curtains to be treated in the same way. Mail matter and mail bags are to be heated to a temperature of 250° of Fahrenheit before they are sent from infected places by railway trains, the same precautions applying to river boats. These and other well-conceived measures of the National Board of Health at Washington being as I have before remarked no longer operative from want of an appropriation at Washington, at the adjourned meeting of the St. Louis convention held at the Ebbitt House at Washington, December 10th, 11th and 12th, a bill was prepared by a committee of the conference and submitted during the session to Congress, but as it would seem from the Report of proceedings of the adjourned quarterly meeting of Illinois State Board of Health of February 5th and 7th, 1885, the House decided that there was no time in the present session to secure the enactment of any new measure of so comprehensive a character, recommending, however, the appropriation of $25,000 for the existing National Board of Health, and of an additional $500,000 to be used at the discretion of the President, and Mr. Frelinghuysen, the then Secretary of State. A section was caused to be inserted in the bill submitted to the House which would give the President the power of forbidding immigration into the United States from the infected districts of other countries. Congress, however, adjourned without taking action on the subject.

At the quarterly meeting of the Illinois State Board at Chicago, April 16-17, 1885, Dr. Rauch stated that although thus far there is an entire absence of official reports from the infected territory in Europe, personal advices informed him of the existence of the

disease up to the 20th of January in Paris, and other parts of France, that it had since reappeared in Toulon, and had broken out in Southern Russia. In the early part of March, cases of what is now admitted to have been cholera appeared in the interior of Valencia, one of the Mediterranean provinces of Spain, that it had since found its way to the sea coast, whence it was carried by shipping to some of the neighbouring provinces, and to many ports in the Balearic Islands. A recent number of the "*Semaine Medicale*" of Paris contains a letter from a correspondent in Alexandria touching the danger of continuous introduction of the disease from Bombay, where it now exists, to the Mediterranean, by vessels from that port utilized by the British Government in its military operations in the Soudan, and in contravention of the Khedival quarantine decree. Finally, within the last few days, April 14th, the ports of Toulon and Marseilles have declared quarantine against all arrivals from Spanish mediterranean ports. Dr. Rauch also states that none of these facts have ever been officially announced by government authority, notwithstanding their importance to the whole country, especially to ports of entrance along the Atlantic coast. Dr. Blaxall, one of the medical officers of the English Local Government Board, gives anything but a favourable picture of present arrangements made for detecting infectious disease among people arriving from the continent at English seaports for embarkation for America, and without prompt intelligence by cable from English Port Officers of Health to the quarantine officers at our several ports of Quebec, St. John, Halifax, and Newfoundland, of ships leaving for one of our seaports with immigrants on board who have left districts of country where cholera prevailed, too prompt attention to the sanitary supervision of travel at ports of arrival, and along railroad and lake lines of journeying from the seaboard to the various provinces of this Dominion, cannot possibly be given. At our last quarterly meeting a series of resolutions having regard to the danger of imported infection were adopted and forwarded through the Provincial Secretary to the Honourable Mr. Pope, the Minister of Agriculture. The communication received from that gentleman, and the reply of our Board thereto, I beg leave now to submit for your consideration. The precautions taken by the Board against the spread of infectious disease during the past year may be thus summarized. Copies of the Health Act, as also copies of a circular reviewing it were sent to 250 municipalities. Copies of letters of enquiry were sent to clerks of cities, towns, and villages, respecting the sanitary condition of their respective municipalities. A very comprehensive memorandum book for the use of sanitary inspectors was prepared in July, and seven hundred copies sent to the municipalities. Copies of the cholera pamphlet issued by the Board, were sent to all municipalities in Ontario, also the different provinces of the Dominion. October 31st, copies of a letter asking for as complete a report as possible of the sanitary condition during the year, were forwarded to 750 clerks and Medical Health Officers. In November, 650 copies of the Report on the prevention of epidemic cholera were forwarded to the officers of every municipality. Four hundred notices of the formation of Local Boards were received and entered on register. Seven thousand copies of the second Annual Report were sent to Municipal Clerks, newspapers, Mechanics' Institutes, Public School Inspectors, state and city Boards of Health, medical men in Ontario, medical correspondents of the Board, clergymen of all denominations in Ontario, as well as a large number of exchanges in America and Europe. Two thousand copies of pamphlet "How to check contagious diseases," were mailed. Four thousand four hundred copies of the sewage pamphlet were mailed. Four thousand three hundred copies of cholera pamphlet were sent out. Eleven hundred copies of by-laws, Schedule A, section 69, were issued. From January to June 650 copies of Weekly Health Bulletin, making a total of fourteen thousand three hundred for first six months of year, were published. For last six months, issued monthly, a total of four thousand two hundred was mailed. Secretaries of state and city Boards of Health were supplied with the circular on School Hygiene. The Hungerford small-pox outbreak Report, which was prepared by the Secretary, Dr. Bryce, was extensively circulated. Besides this detail of sanitary work a very large amount of correspondence, and investigations into outbreaks of disease by various members of the Board, reports of which will appear in the third annual volume, have formed an important part of the work of the year. In this brief review of the subjects that have engaged the attention of our Board, the public will not fail to recognize the liberality of the Provin-

cial Government, by which we have been enabled to circulate a very large amount of sanitary literature, and in some measure to have protected our fellow citizens from the spread of infections, and filth disease. Much yet remains to be done, and being charged with the sanitary interests of a large province we fully recognize our great responsibility, and I feel warranted in saying, will, as long as we are honoured with the confidence of the Legislature, endeavour to discharge our responsible duties to the best of our judgment and ability. To the newspaper press of the province generally we have to return our sincere thanks for the great interest they have evinced in the work we are engaged in as evidenced by the space in their columns so frequently accorded, and particularly have we to express thanks to the city papers for their generally full reports of our quarterly meetings. In conclusion, gentlemen, I desire to express my sense of the invariable consideration and courtesy I have experienced at the hand of every member of the Board, as also of assistance rendered during the past year.

CHAS. WM. COVERNTON,
Chairman.

APPENDIX III.

REPORT OF THE COMMITTEE ON POISONS AND CHEMICALS.

Poisoning.

Many of the cases of accidental poisoning result from poisonous substances being carelessly exposed in places much frequented, without being properly labelled, and many of these painful accidents might be averted by destroying all bottle packages, or boxes containing unknown substances. Care should be taken to have all poisons properly labelled, and carefully kept in a suitable place. Do not make use of arsenic or strychnine carelessly for the purpose of poisoning rats, mice, or other animals, as serious results may follow, and human life be sacrificed.

Poisoning may reasonably be suspected when a person is suddenly seized with violent vomiting, purging, cramps, pain in the stomach, delirium, stupor, unconsciousness, or soon after partaking of medicine, food or drink.

The treatment to be employed under such circumstances should be—

1st. To empty the stomach quickly by encouraging vomiting, and thus getting rid of the poison as rapidly and thoroughly as possible.

2nd. To counteract the effects of the poison by such antidotes as will, either mechanically or chemically, render the poison harmless.

3rd. To remedy the effects produced by the poison and obviate the tendency to death by stimulants, artificial respiration, and exciting the excretory organs.

Emetics.

Emetics are remedies used for the purpose of producing vomiting. The safest and generally the readiest at hand, are, irritating the back of the throat with the finger or a feather; large draughts of tepid water with the addition of a tablespoonful of common salt, mustard or powdered alum; one or two tablespoonfuls of ipecacuanha wine in water; or twenty grains of sulphate of zinc in water.

Antidotes.

Acid and alkalies act as antidotes to each other. Suitable acids for this purpose are vinegar, lemon juice, lime juice, citric acid or the juice of oranges mixed with water. Suitable alkalies are soda, potash, lime or magnesia well diluted with water.

Albumen and Oils will protect and soothe the mouth, throat, gullet, and the walls of the stomach in the case of poisoning by irritating substances. In such cases white of eggs, milk, flour and water, mucilaginous drinks, such as gum arabic water, flax seed, or slippery elm tea, or salad oil, castor oil, linseed oil or melted lard may be used. If the poison taken is phosphorus, oil must not be administered. In all cases of suspected poisoning send for a physician immediately, and lose no time in making use of such indicated treatment as the circumstances of the case may require.

Table of Poisons and Antidotes for Ready Reference.

Acids.—The alkalies such as soda, potash, magnesia, or chalk freely diluted with water. In the absence of these use strong soap-suds freely, or wall-plaster. In all cases except poisoning by sulphuric acid, use water freely—follow with oil or demulcent drinks and the free use of ice.

Alkalies and their salts.—Use weak acids, as vinegar and water, lemon juice, orange juice or citric acid; followed by oil or demulcent drinks with ice.

Arsenic.—Give an emetic as warm water containing sulphate of zinc, mustard, alum or ipecacuanha. Assist the emetic by tickling the back of the throat with a feather or the finger. Use freely albuminous or mucilaginous drinks—raw eggs beaten up with milk very useful—or equal parts of oil and lime water render the poison less soluble. Hydrated oxide of iron in tablespoonful doses frequently.

Antimony and its salts.—Give an emetic with warm water or milk freely—followed by astringent infusions as of oak bark or nut galls; or green tea used very strong. Keep the patient warm.

Aniline dyes.—See arsenic.

Aconite.—Use a stimulating emetic as sulphate of zinc; followed by animal charcoal; give brandy, ammonia, or strong coffee; rub back and limbs well with hot towels; artificial respiration and electricity.

Atropine.—Morphia in small and repeated doses, or opium.

Alcohol.—Produce vomiting as soon as possible, or use stomach pump—administer dilute ammonia—make use of cold affusion—subsequently promote warmth.

Baryta and its Salts.—Give an emetic, followed by a dose of Epsom or Glauber's salts in solution, or dilute sulphuric acid, followed by oils.

Belladonna.—For general treatment, see opium. (Laudanum or morphine may be given in small doses).

Bismuth (impure).—Produce vomiting by an emetic, give freely milk, mucilaginous drinks, or raw eggs beaten up with milk.

Blue Stone.—See copper.

Bromine.—Abundance of fresh air and the cautious inhalation of ammonia, sulphuric ether and the vapour of warm water.

Bug Poison.—See mercury.

Cannabis Indica.—Same as opium.

Cantharides (Spanish Fly).—Give an emetic, followed by flax-seed tea, milk, mucilage, and ice. The warm bath will afford relief.

Carbolic Acid, Creasote.—White of eggs and water, demulcent drinks and oil. Apply warmth to the body if necessary.

Conium (Hemlock).—Give stimulants and use artificial respiration.

Corrosive Sublimate.—See mercury.

Copper and its Compounds.—Encourage for a time the continuance of the vomiting by the free use of warm water, then use raw eggs, followed by milk or mucilaginous drinks and the use of ice.

Cyanide of Potassium.—See Prussic acid.

Colchicum.—Give an emetic if vomiting has not taken place, followed by stimulants.

Chlorine.—Place the patient in a current of fresh air and direct the cautious inhalation of ammonia.

Camphor.—Emetics.

Digitalis.—Give an emetic, and castor oil, followed by an infusion containing tannin, as of nut galls, oak bark, or strong green tea, brandy or other stimulants for the depression.

Ergot and Ergotine.—Give alcoholic and diffusible stimulants, with hot applications to the surface of the body.

Foxglove.—See digitalis.

Fly (Spanish).—See cantharides.

Gases.—Place the patient in a continuous stream of fresh air, make use of cold affusions especially to the head, artificial restoration, and the careful administration of stimuants, and stimulating applications to the chest and extremities. Employ electricity to assist in maintaining respiration.

Gold, Salts of.—Use a solution of sulphate of iron with administration of mucilaginous drinks.

Hydrochloric Acid.—See acids.

Hellebore.—See veratrum.

Hydrocyanic Acids and Compounds.—See Prussic acid

Hyoscyamus (Henbane).—Give a stimulating emetic, as sulphate of zinc with a good dose of castor oil following it, use in addition animal charcoal. General treatment same as in the case of opium.

Iodine, Iodide of Potassium and Compounds.—Encourage vomiting, and give freely of amylaceous fluids, as gruel, arrow root, boiled starch or wheat flour and water. These should be continued till the vomited matters are no longer of a blue colour; after which, give a mixture of vinegar and water, and open the bowels freely by means of a purgative.

Iron, Salts of.—Administer carbonate of soda or magnesia in connection with the free use of mucilaginous drinks and milk.

Jamestown Weed.—See stramonium.

Laudanum.—See opium.

Lead, Salts of.—Give sulphate of soda or magnesia dissolved in water pretty freely, milk or milk and egg will be useful. If vomiting is absent give an emetic—dilute sulphuric acid or lemonade may be used.

Lime.—See baryta.

Lobelia.—See tobacco.

Lye.—See alkalies.

Mercury, Salts of.—Give raw eggs and milk abundantly or wheat flour and water, follow with an emetic. Use demulcent drinks and ice.

Morphia.—See opium.

Muriatic Acid.—See acids.

Mushrooms (Coloured or Poisonous).—Give an emetic, followed by castor oil.

Nux Vomica.—See strychnia.

Nitrate of Silver.—See silver.

Nitrate of Potash, Nitrate of Soda.—Give a stimulating emetic and see alkalies for general treatment.

Opium.—Give the most active emetics, as sulphate of zinc, mustard, alum or tartar emetic. Use at once, if possible, the stomach pump or stomach tubes. Give strong coffee with belladonna or atropine in small doses; keep the patient in motion and dash cold water on the head and shoulders. Should these means fail the electro-magnetic battery or artificial respiration must be employed. Persevere as long as life continues.

Oxalic Acid.—See acids.

Paragoric.—See opium.

Potash.—See alkalies.

Phosphorus.—Evacuate the stomach promptly and freely by emetics, avoid oils, give magnesia in water and mucilaginous drinks freely. Use animal charcoal and old oil of turpentine.

Prussic Acid and Compounds.—Give immediately ammonia or brandy and water; apply ammonia to the nostrils, make use promptly of cold affusion over the head and neck and repeat it at short intervals; chlorine water may be administered.

Paris Green.—See arsenic.

Rat Poison.—See phosphorus, arsenic and strychnia.

Sulphuric Acid.—See acids.

Salts of Silver.—Common salt freely in solution and white of eggs, oil and milk.

Strychnia.—Give emetics until free vomiting is induced. administer green or black tea freely. Use ether or chloroform by inhalation.

Stramonium.—Use animal charcoal. General treatment, see opium.

Sugar of Lead.—See lead.

Tansy.—Give a dose of castor oil and use sedatives.

Tartar Emetic.—See antimony.

Tin, Salts of.—Give white of egg, flour and water, or milk.

Tobacco.—Give a stimulating emetic, castor oil, brandy or ammonia, a mustard plaster over the stomach and warmth to the surface of the body.

Veratrum Viride.—Give alcoholic stimulants, ammonia, laudanum, warm applications and friction and galvanism if necessary.

Winslow's Soothing Syrup.—See opium.

Zinc, Salts of.—Encourage the continuance of the vomiting by the use of warm water, give white of eggs, milk and mucilaginous drinks; carbonate of soda may be given freely diluted with warm water.

In all cases of Poisoning by Toad Stools, Puff Balls, or other poisonous fungi, or any of the poisonous berries, wild fruits or tubers.—Give an active emetic and follow it by a dose of castor oil or olive oil.

In all cases of poisoning by vegetable substances, give freely of animal charcoal, particularly if the case has been recognized very shortly after the poison has been taken.

APPENDIX IV.

REPORT OF THE LONDON SEWAGE INVESTIGATION COMMITTEE.

To the Chairman and Members of the Provincial Board of Health :

GENTLEMEN,—Your Committee on Sewage, Drainage and Water Supply, having been requested by you, with the approval of the Hon. A. M. Ross, the Minister of the Department to which the Board is attached, to make inquiry as to the disposal of the sewage of the City of London, and the alleged pollution of the water of the River Thames and of Carling's Creek, and as to the effect which Blackfriar's Dam, the Water Works Dam, and any other dam in or near the said city, have respectively upon the water of the said river, and upon the localities in the neighbourhood of such dam or dams, begs leave to present the following report :

Reasons which led to the Investigation.—It may be well, in the first place, to set forth briefly the steps which led to the inquiry. It was reported to your Board, by the Secretary, at its November meeting, that a petition had been received by the Local Board of Health, of the Village of London West, complaining that a nuisance was caused by Blackfriar's Dam, otherwise called Saunby's Dam, and asking that it be removed ; that the Local Board had ordered its removal ; that the County Judge had quashed the order ; that the Local Board had, in a more formal and legal manner, again ordered the removal of the dam, and in consequence of the order not having been complied with, had referred the matter to the Provincial Board for its action under the Act of 1884.

Your Secretary further reported that a joint communication had been received from the Local Boards of Health of the City of London, the Town of London East, and the Township of London, asking for an investigation of the condition of Carling's Creek.

A resolution was then passed by your Board on the 27th November, 1884, to the effect that the Chairman be requested to inform the Minister of the Department of the foregoing facts, and that the Board considered it to be its duty to accede to the requests of the Local Boards mentioned above, and "that the Chairman be further requested to ascertain whether such action meets with his approval, and if the reply be in the affirmative, that the question be referred to the Committee on the Disposal of Sewage."

In the following January a petition was received from 114 "inhabitant householders of the Townships of Westminster and London," complaining that the Water Works Dam had created a stagnant pond "nearly four miles long," and holding "large quantities of mud, filth, sewage, vegetable and animal matter," and depositing them, by reason of the rise and fall of the water, "on the banks and neighbouring lowlands, coves and ponds," where, "exposed to the rays of the summer sun, they decay and decompose, emitting foul and injurious smells and vapours, and causing the growth and dispersion of vast quantities of deleterious spores and seeds of disease."

The petition further stated that the Local Boards of these two townships had neglected to investigate the cause of complaint, and under Sec. 37 of the Act of 1884, the petitioners requested the Provincial Board to do so.

Meanwhile, the Local Board of the Village of London West had also taken up the question of the Water Works Dam, and in February made the same request of the Provincial Board of Health as they had done in regard to Saunby's Dam.

Your Committee considered that a satisfactory investigation could not be made as long as the river and environs were covered with snow and ice, and therefore postponed it till the spring time.

In the meantime, it having been enacted by the Public Health Act of 1885, that "no determination or order of the Provincial or Local Board of Health for the removal or abatement of any nuisance shall be enforced, except by order of the High Court of Justice, where such removal or abatement involves the loss or destruction of property of the value of $2,000 or upwards, and upon any application to the High Court the order of the Provincial or Local Board shall not be evidence that the matter or thing complained of was, or is, in fact, a nuisance."

Your Committee thought it would be advisable to refer the matter again to the Minister, and intimated this in a report to the Chairman on 13th May, 1885, in the following words:

"Whilst your Committee is aware that, from a sanitary point of view, there is as great a necessity as ever for the investigation, and that the Board may be considered remiss in its duty as an advisory body if it does not take up the question, still your Committee thought that before proceeding, it would be well to bring the matter again under the notice of the Minister, and to point out to the litigant Boards the change contained in the limiting clause of the Act of 1885."

On the 16th May your Committee received from the Secretary a reply, stating that he was "instructed to inform the Committee on Sewerage and Water Supply that the Honourable the Minister of Agriculture does not consider said clause of the Act to in any degree limit the action of the Provincial Board of Health in regard to said investigation, also, that he desires such investigation should take place."

As further action had been taken by the municipalities in regard to the Water Works Dam since the November meeting of the Board, you will remember that the following resolution was deemed advisable and passed, and that it was approved by the Minister, as follows:

(Copy of a Resolution passed by the Provincial Board of Health this 29th day of May.)

"Moved by Dr. Rae, seconded by Dr. Yeomans—

"The Provincial Board of Health having had under consideration the alleged nuisance at London, and the requests of certain Local Boards of Health for an investigation, hereby reaffirm their resolution of the 27th November last regarding the desirability of an investigation, and authorizing William Oldright, Esq, M.A., M.D., and J. Galbraith, Esq, M.A., members of the said Board, to inquire in respect of the following matters:

"As to the disposal of the Sewage of the City of London, and the alleged pollution of the water of the River Thames and of Carling's Creek, and as to the effect which the Blackfriars Dam and the Water Works Dam have respectively upon the water of the said river, and upon the localities in the neighbourhood of such dams.

"I hereby certify that the above is a true copy of the resolution passed by the Provincial Board of Health, May 29th, 1885.

"(Signed) H. P. YEOMANS,
"Sec. *pro tem.*

"I approve of the inquiry contemplated by the above resolution being made by Dr Oldright and Professor Galbraith.

"(Signed) A. M. ROSS,
"Provincial Treasurer."

Your Committee having given due notice, and made all necessary arrangements for obtaining information, proceeded to London on the 2nd of June, sat from day to day till the 6th of June, heard the evidence which is recorded in the bound volume and exhibits presented herewith, and made a personal inspection of all the localities included in the instructions to your Committee, and also of ponds and low places in the various municipalities to which it was thought might be attached some portion of the influences charged against the river.

General description of localities.—The City of London is situated in the angle between the north and south branches of the Thames River, which unite near the south-west corner of the city, whence the river flows in a general westerly direction. The municipality of London West is situated in the angle between the north branch which flows southerly and the main river flowing westerly, the north branch thus forming the boundary between London City and London West. The Township of Westminster lies on the south side of the south branch and the main river.

The mill-dams hereafter mentioned are situated as follows: Saunby's lower dam or Blackfriar's Dam is on the north branch, a short distance below Blackfriar's Bridge, and about half a mile above the Forks or junction of the north and south branches: Hunt's Dam is situated on the south branch about three-quarters of a mile above the Forks.

The Water Works Dam is on the main river about three and one-half miles below the Fork's; Griffith's Dam is a little more than a mile above the Water Works Dam, and is not used, being covered by the water held back by the Water Works Dam; Saunby's or Blackfriar's Dam raises the water about four feet, Hunt's Dam about six feet, and the Water Works Dam 10 feet 6 inches. Griffith's Dam is nearly at the same level as the Water Works Dam, but if the Water Works Dam were not in existence, it would raise the water only about four feet. There is thus about six feet fall in the river between Griffith's Dam and the Water Works Dam.

Saunby's mill is a flour mill, and is provided with a steam engine capable of doing the whole work without the aid of water-power. Hunt's mill is a flour mill also, and is furnished with auxiliary steam-power, which, however, is not capable of doing the whole work alone.

The Water Works Dam is used to afford power for pumping the city water supply. There is also a compound steam engine for the same purpose, which is capable of doing the whole work required at present without the aid of water-power.

In the cases of all three dams the engines are used generally only when the supply of water is not sufficient.

A railway bridge on the Great Western Division of the Grand Trunk Railway crosses the main river about a mile below the Forks, and is known as the Cove Bridge. On the south side of the river at this point there is a depression in the ground shaped somewhat like a horseshoe, known as the Coves. This depression is about two miles in length, and is filled with water supplied by springs and small creeks. The water flows into the river, but a great part of the channel in the Coves is some feet deeper than at the point where it empties into the river. Carling's Creek is from five to ten feet wide, and flows through the city in a general direction parallel with the south branch, being distant from it about $1\frac{1}{4}$ miles, and emptying into Saunby's mill-pond a short distance above Blackfriar's Bridge.

The principal sewers of the city are King Street sewer, emptying into the south branch close to the Forks; Richmond Street sewer, emptying into the south branch immediately above Hunt's Dam, and Wellington Street sewer, which also empties into the south branch above Hunt's Dam. King Street sewer carries about three-fourths of the present sewage. Besides these main sewers, some smaller drains and sewers empty into the river. Above Blackfriar's Dam the river receives the sewage from the Protestant Orphan's Home, the Roman Catholic Orphan's Home and the Ladies' College. The number of inmates in these three institutions is about 230. Connected with the Ladies' College is a gas-works, the refuse from which finds its way to the river. The refuse from Carling's brewery enters Saunby's mill-pond, and also the sewage and refuse carried by Carling's Creek and Jeffrey's and Birrell's drains. The river above the dam drains a well-settled country and the town of St. Mary's. Carling's Creek receives part of the asylum sewage, refuse from a tannery, a brewery and a slaughter-house. There are a number of privies built over the creek, and also house-drains and water-closets connected with it. This creek is the natural drainage outlet for the north part of the city, and, as the sewage system is extended, must receive constantly increasing quantities of sewage. Hunt's pond on the south branch, in addition to receiving the sewage from the Richmond Street and Wellington Street sewers, receives the hospital sewage and part of the asylum sewage. It is also contaminated by several oil refineries, a bone-yard, a

soap and candle-factory and a slaughter-house. There is also a glue-factory on it. We do not know whether the latter is in operation at present.

Below Hunt's Dam the King Street sewer, carrying about three-fourths of the present city sewage, enters the south branch. Dundas Street sewer empties at the Forks. The gas-works are also situated on the south branch below Hunt's Dam. In addition to the direct evil caused by the retention of sewage matter by the Blackfriar's and Water Works Dam, the Board of Health of London West complains of the effect of these dams in causing spring floods, which overflow the low ground in their municipality, causing damp cellars, impure well-water, etc.

The evidence taken by your Commission goes to show that London City does not complain to any great extent of illness supposed to arise from sewage thrown into the river, except in the neighbourhood of Hunt's Dam at the foot of Richmond Street, and along the river at Thames Street. There have also been cases of typhoid along Carling's Creek, and along the southern portion of the city. The places which seem to be principally affected are London West, London South, the Coves, and the low-lying land near the river edge down to near the Water Works Dam. This immunity of the city in general, so far as the influence from the river is concerned, is perhaps due to the fact that the greater part of the city stands at a considerable height above the river, and is thus better situated, from a sanitary point of view, than the places where the complaints are principally made. Difference of level is an important factor in determining the relative healthfulness of different localities. This point must be carefully borne in mind in considering the different attitudes of the several municipalities interested in this investigation.

While the city may, on account of the elevation of its site above the river, not at present feel to a great extent the consequences of casting its sewage into the river, yet it must be remembered that now its sewer system is of small extent compared with what it will be in the near future, and that with about five thousand houses there are only about three hundred water-closets connected with the sewers.

If the contamination of the river, under these circumstances, is sufficient to cause the complaints already made, the results of continuing the present system of sewage disposal may be more easily imagined than described.

The north and south branches and the main river below the Forks are from 200 to 500 feet wide, with a gravelly bottom. The river is very shallow where unaffected by dams during times of low water, not averaging more than a foot or two in depth. The natural fall, leaving the dams out of consideration, is nearly as follows:—From Saunby's Dam to the Forks the fall is about four feet; from the Forks to the Cove Bridge, two feet; From the Cove Bridge to Griffith's Dam, five feet; from Griffith's Dam to the Water Works Dam, about six feet. We could not obtain information as to levels on the south branch.

The still water in Saunby's pond extends about one-third of a mile up from the dam; in Hunt's pond about a mile, and in the Water Works pond about two miles above the dam. None of the ponds are much wider than the average width of the river in this vicinity.

The river is subject to spring freshets, which carry ice and sediment over the low-lying lands of London West and the Coves. These freshets are aggravated by ice jams which keep the water back, and thus tend to flood low land. The obstructions in the river to which these jams are attributed by those who have observed them are as follows: Shoal places in the river; sharp bends in the river; the Cove Bridge, and the dams (the latter being supposed to act as obstructions, principally on account of the large mass of thick ice formed above them). Opinions differ very much among the witnesses examined as to the relative effects of the various causes above enumerated in causing the jams.

Extensive floods have occurred occasionally in the summer season, which have been aggravated by the obstructions above mentioned. The flood of July, 1883, was one of the most remarkable. It raised the water at Blackfriars Bridge sixteen feet above the natural level; at the Forks, nineteen feet, and at the Water Works, twenty-two feet above ordinary level of summer water.

Effects of the dams in retaining filth.—In the ponds formed by the dams, sediment and the solid portions of the sewage and refuse contained in the water sink to the bottom

and form filthy deposits. There is also a fluctuation in the level of the water in the ponds of from one to two feet, or perhaps more, caused by the working of the mills. This causes a deposit of vegetable scum and sewage on the exposed portions of the banks which gives off malarial gases. In addition, the water in the ponds is more or less stagnant, and gives off unwholesome exhalations. At about six feet below the surface of the ground in London West there is a bed of gravel through which the contaminated water in Saunby's pond probably percolates and injures the wells. The dampness of ground and cellars caused by floods conduces to malaria. The floods also contaminate wells by carrying into them filth deposited on the surface of the ground.

To all the causes above mentioned the unsanitary state of affairs which has been complained of is due.

Condition as to filth.—The mass of evidence establishes the fact that the various localities in the river and creek alluded to in the notice of investigation are unclean.

The differences of opinion are (1) whether the various localities would be more unclean or less unclean if the dams were removed, and the impurities still allowed to pass into the river.

(2) And as to the degree of filthiness; and (3) the relative filthiness of the various localities.

Amount of filth from sewers.—From the evidence of the Health Inspector and City Engineer, we know that there are 300 water-closets and about 100 privies connected with the drains and sewers. We have from other data obtained, made an average of five persons using each of these. We also know from calculations obtained from recorded observations that the result of this will be that about fifty-seven tons of solid human excrement are annually poured into the river through the sewers, and 29 292 cubic feet of urine, besides the refuse from kitchen waste, baths, water used for laundry and scrubbing purposes, etc.

Other filth going into the river.—This does not include a number of privies emptying into Carling's Creek, and the sewage from the various institutions named as existing on the north branch above Saunby's Dam. Besides these are the washings of filth from the surface of the streets and yards, and the products of slaughter-houses, a knackery, oil refineries, breweries, a soap and candle-factory, gas-works and other establishments, all of which empty filth into the river.

It must be remembered further that constant additions are being made to the sewerage system, and that under a proper condition of outfall this should be encouraged. The Water Works and sewerage system are still young, and we may expect the rapid increase of sewage with the facilities offered by the excellent water supply of the city.

It is evident from the sketch of the topography given that all the filth which enters the river, including what has been mentioned, must pass through the Water Works pond, less so much of it as may have been oxidized on the way down. The run to the commencement of this pond is very short and the pond of dead water very long.

Full particulars as to Hunt's and Saunby's Dams have been already given.

Chemical analysis.—Amongst the evidence will be found a series of analyses by Mr. Wm. Saunders, public analyst, and a report by him showing that at all the points referred to the water is far below the standard of potable water. At one point in the Forks he considered that the water contained 10-100 of sewage.

Influence of stagnant water.—We will first point out that the weight of opinion, medical and otherwise, inclines to the theory that stagnant water is in itself detrimental to health. The bulk of testimony in this investigation is in the same direction.

Dr. Arnott has made the matter a subject of special study in connection with papers published by him, and has had much personal experience. His evidence will be found very strong in confirmation of this theory. Drs. Moorehouse, Moore, Piper, and Eccles, also supported it, but thought the presence of dead organic matter must always be a factor in the production of malaria from stagnant water. Dr. Niven was the only medical witness who thought that mill-dams "do not do much harm" to health, and he limited this opinion by the proviso, "if they are kept clean." He based his opinion on negative

observations, he having lived in the vicinity of mill-ponds in England, which, we must presume, were kept clean. At the same time, he thought Hunt's Dam would be better away, "if the sewage were not allowed to enter it."

Effects in producing sickness.—In estimating the influence on health of the condition we have described, we necessarily turn to those diseases which are frequently designated "filth diseases," and those which are of malarial origin. Pre-eminent among filth diseases is typhoid fever, and we have made a comparison of the number of deaths per hundred thousand from typhoid fever in the City of London with the numbers in various other cities, and in some of these the numbers both before and after the introduction of proper systems of sewage disposal are given.

City.	Period.	Sanitary Condition.	Death-rate per 100,000 from Typhoid Fever	Period.	Changes in Sanitary Condition.	Death-rate per 100,000 from Typhoid Fever.
Frankfort-on-the-Main	1854–59	No sewerage.....	87	1875–80	Sewerage completed.	24
Dantzic	1865–69	No sewerage; no proper water supply.	108	1871–75	Water-supply introduced.	90
				1878–80	Sewerage added.	18
Munich	1854–59	Absolutely no regulations for keeping the soil clean.	242	1860–65	Reforms began by cementing the sides and bottoms of cess-pits.	168
				1866–73	Partial sewerage.	133
				1876–80	Sewerage improved.	87
				1881–84	Sewerage still further improved.	17
Toronto	1881	Partial sewerage and water supply in these cities, but sewage not carried to a safe distance, nor properly disposed of; many privy pits polluting the soil and wells; refuse deposited in ravines and hollows; no skilled inspection of house-drainage.	74			
	1882		69			
	1883		80			
	1884		65			
Hamilton	1881		65			
	1882		47			
	1883		30			
	1884		41			
London	1882		110			
	1883		52			
	1884		65			

The statistics of Canadian cities are taken from the reports of the Registrar-General, and there is no probability that a less number of deaths occurred from typhoid fever than what are there reported.

As regards diseases of malarial origin, we have the evidence of the various medical men that there have been a large number of cases in the various localities to which reference has been made.

Low Grounds in London West.—It is true that the ponds and low grounds in London West, at the Coves and other places, give rise to much malaria, but this does not account for that in existence on the lower portion of the south branch and in the vicinity of Hunt's Dam. Besides, the existence of the Water Works Dam, especially when the "flush boards" are on, prevents the draining of some of these ponds and low places.

That London and its environs are as healthy as they are is due to its possessing very many advantages, and it is not wise to say that we may therefore tolerate conditions which give such a large mortality from typhoid fever and malarial diseases. Nor is it anything to the point to say that it is no worse than Toronto, where the outfall is very foul.

With regard to the matter brought up in the evidence of Mr. Garrot and Dr. Gardiner as to some closets draining into the property of the former and his immediate neighbours, and affecting their health, we would say that this is a matter for the attention of the London Board of Health.

Recommendations.—We will now proceed to describe the method which we consider best adapted to improve the sanitary condition of London and its neighbourhood.

An intercepting sewer should be built to catch all the sewage and prevent it from being deposited in the river at the points where it is now discharged. At the outlet of this intercepting sewer chemical precipitation works should be erected by which the solid parts of the sewage will be separated from the liquid, and the latter purified to such a degree that it may be allowed to pass into the river without contaminating the latter.

The position of these works will depend in a great measure upon the method used for treating the solid matter. In some methods the solid matter is deposited over a certain area of ground and allowed to dry. This is always accompanied by a certain amount of smell which is a nuisance to the immediate neighbourhood. If this system were adopted, it would be necessary that the works should be at some distance from habitations. A method, however, has been lately invented by Messrs. S. H. Johnson & Co., of Stratford, England, in which the solid matter is separated from the liquid by means of presses, and is formed into cakes which have considerable manurial value. This work is done in a building, and the works are no nuisance to the neighbourhood. We consider that this would be the best system for London. Another advantage of this system is that the trouble and expense of carrying an outlet sewer across the river would be avoided if a suitable place for the works could be found in London city.

Again, we consider that the Water Works Dam, Griffith's Dam, Hunt's Dam, and Saunby's Dam should be removed.

It is our opinion that they are one of the principal causes of ice-jams, and all the consequent unsanitary effects before mentioned. We are also of opinion that they conduce to malaria from the rise and fall of water in them, allowing decomposition of vegetable matter on the banks, and also from the water in them being partially stagnant. We believe this to be the case, even although the sewage be kept out of them.

We are also of opinion that such changes should be made at the Cove Bridge as to render the passage freer in time of floods, whether they are accompanied by ice or not.

The channel of the river should be improved by dredging shoals, in order to lessen the dangers of ice jams. Means must also be taken to prevent the currents from the north and south branches meeting so directly as they now do. The consequence is the formation of eddies, and deposition of sediment in the neighboughood of the Forks, and the obstruction of the flow.

We believe that the above-mentioned changes would materially lessen the flooding of the land, which occurs during freshets, whether accompanied by ice or not. If, however, flooding of land should occur after these improvements have been made, it would be necessary to straighten the river where the sharper bends occur. One of the spots said to have the greatest effect in arresting the flow of ice is the bend opposite the Woodland

Cemetery. This is the first bend, the straightening of which we would advise, if found necessary. There is a shoal also at this point, the removal of which might be found to be sufficient.

There are two very sharp bends close to each other, one on each side of the Cove Bridge, the improvements of which would require expensive alterations in the river channel if the Cove Bridge were left in its present position. If the Cove Bridge were removed to a point some distance east of its present position, the excavation necessary for the bed of the river would be comparatively small, and the river would be immensely improved.

The above are the principal points where the course of the river should be altered, if found necessary.

It would probably be found necessary to do a certain amount of dredging every year, as new shoals would constantly form, but this work would be small, compared with that done at first.

Improvements might be made by degrees.—The cost of the improvements above proposed would perhaps be found too great if they were all made at the same time.

In this case we propose that they should be made as follows:

The dams should first be removed, and the sewage that is now held back by them allowed to flow away immediately. In order that the sewage, during times of low water, may not collect in places on the gravel, a narrow channel should be dredged out in both branches, and down the main river to somewhere in the neighbourhood of Griffith's Dam. The channel should be narrow enough to cause a sufficiently rapid current to prevent the sewage being deposited on the gravel. It would of course be necessary to keep this channel in good order. Some of the witnesses considered that the flows of water in the dry season would be too small to carry the sewage, and leave the bed of the river clean; but we are of opinion that the supply of water will be sufficient if a proper channel is made.

The remainder of the work above proposed could then be done, and the sooner the better, to avoid the continuance of the annual expense involved in maintaining the above-mentioned narrow channel for the conveyance of the sewage during periods of low water. Should it be decided to make the outlet of the intercepting sewer in the neighbourhood of the Coves, the erection of the chemical precipitation works for the purification of the sewage might be delayed until it was rendered necessary in the interests of the population further down the river.

In this case, however, it would be necessary to maintain a channel in the bed of the river for the proper carriage of the sewage, in times of low water, to a point a short distance below Griffith's Dam. One very material advantage incident to the abolition of the dams is, that it would afford an opportunity for every heavy rain to sweep the bed of the river clean.

In the course of the investigation it was suggested by several of the witnesses that if proper sluice-ways were made in each of the dams, they could be occasionally emptied, and the sewage thus removed. We do not concur in this opinion. One consequence of emptying the ponds by sluices would be a decomposition of all matter in suspension on the bottom of the pond where it, together with the organic matter already lying there, would be exposed to the atmosphere and decompose. Emptying the ponds in this way, would thus prove very dangerous to the health of the neighbourhood.

It is true that the channel below the dam would be thoroughly scoured, but this was not the object aimed at in the above proposal. In this connection, it may be as well to give a caution as to the time of year when the work of removing the dams should be done. This work should be done late in the autumn, or during the winter months, in order to minimise the decomposition of exposed organic matter. The spring freshets would then sweep out all impurities, and leave the bed of ponds and river clean.

Internal sewerage of London.—With regard to the internal sewerage of the City of London, we would advise the immediate construction of a trunk-sewer along the line of Carling's Creek, and that steps be taken to replace privies and cess-pits by water-closets connected with the sewers. Where householders have not the opportunity to introduce water-closets, some form of dry earth-closet should take the place of the privy.

Drainage in London West.—Complaints have been made by several witnesses of the swamps near the English Church, and of other malarious spots (to which reference has been before made), and that much sickness is attributable to these. We have no evidence that adequate means have been taken by the people of London West, in the endeavour to drain this swamp, although something has been done at others of the places referred to.

We are of opinion that all those places should be drained without delay.

Improvement of the Coves.—From the evidence on the whole, it does not appear that there has been much difference in the sanitary condition of the Coves since the Water Works Dam was erected.

We think these should be dealt with, and their sanitary condition improved. The provisions above proposed would be some of the steps in this direction.

Soil pollution from privies.—It need hardly be pointed out to this Board that some effort must be made in London, as elsewhere, to get rid of the abomination of privy-pits, saturating the soil, air, and ground-water with their filth. One small step in this effort may be the pointing out that a population of 25,000 people will produce annually 712 tons of solid excrement.

People ought to be able to judge whether it is wise to store this in holes in the ground within the limits of London city.

Garbage stored in hollows.—It will be seen that in London, as in Toronto, the practice exists of storing garbage in the city, by filling up ravines and low places with it. Houses built over such places will for years draw up into them the gases from decomposing organic matter.

These two lasts-named conditions are fruitful sources of typhoid, and other low fevers.

Dry Earth System, if outfall is not improved at once.—If for any reason the recommendations made by your Committee regarding an intercepting sewerage system cannot be carried out for some time to come, we would deprecate the connection of any more water-closets, cess-pools, or privies with the sewers, and would substitute for it the dry earth system, under the oversight of the Local Board of Health.

Dry Earth System for London West, and London South.—In London West, and London South, privies should be abolished at once, and the dry earth system established with systematic oversight and removal by the municipal authorities. This is specially necessary in London West, with its gravelly bed, and free percolation from privies to wells, polluting them, as also the ground-water, ground-air, and the air above.

It will be evident to you, that the drinking-water system of London West is in a very unsatisfactory condition. There is great danger of percolation from malarial spots as well as from filth.

Acknowledgement of Courtesies.—We have to thank the following gentlemen for courtesies and assistance received: The Mayor and Aldermen of London, for the use of rooms in the City Hall, and for other courtesies: Ald. Cowan, Chairman of the London Board of Health, for undertaking many of the arrangements for the investigation; to the many other gentlemen with whom we came in contact during the investigation, for the assistance rendered by them.

All which is respectfully submitted.

(Signed) WM. OLDRIGHT.
J. GALBRAITH.

Toronto, Sept. 14, 1885.

Received and adopted.

J. J. CASSIDY, Chairman *pro tempore*.

September 14, 1885.

APPENDIX V.

REPORT OF THE COMMITTEE ON EPIDEMICS.

To the Members of the Provincial Board of Health:

GENTLEMEN,—In view of the facts which are abundantly set forth in the history of the Hungerford small-pox outbreak, your Committee, after a careful consideration of the matter, deems it of the highest importance that the views of this Board be set forth regarding the immediate necessity of measures being adopted by which the provisions of cap. 191, R. S. O., be carried into effect throughout the whole province.

Before referring more particularly to the means which it would seem advisable to recommend in this connection, your Committee desires to repeat in order if need be to lend greater force to the recent experience in Ontario, statistics which if often quoted before, cannot be too frequently set forth.

English vaccination returns give the following mortality amongst persons having small-pox:—

MORTALITY—PER CENTUM OF CASES.	1863.	1864.	1865.	1866.	1867.	1868.	1870.
General	17.0	12.9	13.0	13.0	12.66	11.0	15.4
Unvaccinated	48.0	36.0	38.0	35.7	36.80	34.0	38.5
Vaccinated	12.0	8.7	7.4	7.3	8.29	6.2	7.9

Again, Dr. Lyons in a paper read in Dublin, 1872, gives the details of the mortality of patients under his care at the Hardwicke Free Hospital, Dublin.

	Deaths per cent.
Of the re-vaccinated (3 in all)	0
Of 542 vaccinated	11.20
Of 66 non-vaccinated	80.00

During the small-pox epidemic in London, 1870, 6,221 patients were treated in the Hampstead Hospital. Of these:—

		Deaths per cent.
Unvaccinated numbered	1,248	51.12
Vaccinated „	4,973	11.4

Such statistics with similar results might be multiplied indefinitely to shew that, where vaccination has been once performed, even though re-vaccination had been neglected, the mortality from the disease is enormously decreased.

With such facts before us, shewing that in the most recent years, medical science has not discovered any method of therapeutical practice by which the mortality from the disease can in any notable measure be lessened, and further, that vaccination once performed, decreases to a very large extent the mortality in those cases which contract the disease, we have the necessity forced upon us as a Board, of urging by every means in our power upon the attention of the proper authorities the dangers present to the province from neglect of vaccination, and the duty under the Vaccination Act of both individuals

and municipal authorities. The difficulty which exists at present is that, while the Vaccination Act is practically a compulsory Act, the municipal authorities in health matters, having hitherto had no proper status, have never in Ontario been in a position to carry the act into force By the Health Act of 1884, which has given to each municipality a Local Board, whose special duties refer to all matters affecting the public health, a means has been supplied by which municipalities can with the greatest convenience put in force provisions of the Vaccination Act. An important omission was made in the Health Act when the powers and duties of Local Boards were not extended so as to enable them to carry out this work, and when a clause was not inserted making it one of the duties of the Provincial Board to see that vaccination be everywhere carried out. Experience has proven that the Act which has been on the statute book since 1861, (24 Vict. cap. 24) has been practically a dead letter, and that it will continue to be so, unless machinery, other than that hitherto in existence, be set in motion for carrying it out. Past experience shows that we can have no reasonable doubt of this. The population of Ontario that is growing up is in large measure an unvaccinated one, and recent events give abundant proof that this Board will be wanting in its duty should it not continue to press upon the Government for an amendment to the Public Health, placing vaccination under the control of Boards of Health, Local and Provincial. That this was intended is apparently seen in the fact of a clause being inserted in the Act of 1882, establishing the Provincial Board, requiring the Secretary to keep on hand at all times a supply of reliable vaccine. A reference to the Vaccination Act, cap. 191, R. S. O., shows that certain of its clauses are largely made unnecessary by this clause of the Act of 1882. Clauses 1, 2, 3, 4, of the Act relate to the duties laid upon all Hospital authorities receiving Government aid, of keeping vaccine on hand, and of vaccinating all poor who come to them, before they can obtain the Government Grant to said hospital. The subsequent clauses with the addition of clause 63, inserted in the Public Health Act, 1884, refer to the duties of Councils and individuals regarding vaccination. These provisions, which are taken from the English Vaccination Act, are ample for securing thorough vaccination, should the powers given to Councils be transferred to Local Boards, with a few additional executive facilities. Without going into the details of the various clauses of the Vaccination Act, your Committee desire to indicate some of the advantages flowing from the transference of these duties from the Councils to Local Boards.

1. The Health Act, 1884, gives the Council power to appoint a Medical Health Officer, who shall be an officer subject to the directions of the Local Board of Health. Now, one of the difficulties hitherto has been in the appointment of Medical Health Officers, that only a few Councils have appointed them, since they would require to pay them a salary. As section 5 of Vaccination Act gives the power to the Council to appoint a legally qualified medical practitioner as public vaccinator, and to contract with him for the performance of vaccination of all poor people, at the expense of the municipality, and of all others at their own expense at a cost of twenty-five cents for each successful vaccination, for which he has to give a certificate, the Local Board, were it given power to see to the carrying out of the Vaccination Act, would be in a position to see that a Medical Health Officer, though being appointed public vaccinator, obtain at least partial remuneration through vaccination fees, and that thus the Council would be relieved of the principal objection to the appointment of a Medical Health Officer, viz., that of expense.

2. The second great advantage in having this work under the control of the Local Board of Health is, that it could obtain information regarding vaccination by the Sanitary Inspector, who could very easily obtain all the facts regarding the number of persons vaccinated and unvaccinated in his visits to different houses, and thereafter report them to the Secretary of the Board, who by printed forms could notify them of the requirements of the Act, and the penalties for their non-fulfilment. The returns made by the public vaccinator to the Board of those successfully vaccinated, would place it in a position to take such measures as would secure compliance with the Act. The Secretary of the Local Board of Health, who is likewise Registrar of births, marriages and deaths, would also be in a position to know the new-born children remaining unreported as being vaccinated

3. In conjunction with this arrangement it would be necessary for the Local Board of Health to supply all practitioners within their municipality with printed blank forms, similar to those in Schedules A, B, C, of Vaccination Act, to be filled in and given by them to patients who have been successfully vaccinated by them. The Sanitary Inspectors could thus be at once assured that vaccination had been successfully performed in the members of a family through the production of the certificate.

4. The Local Board would also make arrangements whereby the public vaccinator would attend at stated intervals of time at convenient centres to which all could come, and be sure of being vaccinated with reliable and fresh vaccine.

5. There can be little doubt but that the absence of any systematic plan for public vaccination has been one of the chief reasons why so necessary a prophylactic has fallen into neglect. Three years' experience in keeping according the Act of 1882, a supply of vaccine on hand has demonstrated to your Secretary the difficulty there is with an uncertain demand in keeping it fresh; and further it has been made evident that many practitioners forget that vaccine virus being an animal matter is peculiarly liable to organic change, since they have, after getting, say ten points, used part and put the rest away for future use, using them weeks and months afterwards. Finding them inert they have been inclined to blame the source of supply.

It will be apparent that in order to remedy such difficulties as these some general demand must be created, and thus supplies of fresh vaccine can be regularly obtained. Should the system outlined be inaugurated it will be a matter for the consideration of this Board whether it cannot with advantage arrange for the institution of an establishment for supplying bovine virus to Boards throughout the Province. Besides re-vaccinations, which would utilize a considerable amount, enough would be required for the vaccination of over 40,000 children, which registrations show are annually born in Ontario.

That such a scheme is viewed with favour, a number of circulars from Local Boards of Health during the past month amply testify.

The report on epidemics cannot be as complete as might naturally have been desired, owing to the statistics not being as minutely supplied to the proper authorities as is essentially necessary for estimating the prevalence and death rate of the various infectious diseases. More stringent regulations for the enforcement of the registration of marriages, births, and deaths, causes of death, etc., upon all persons on whom, by statute the duty devolves, would seem to be required. The compilation of vital statistics would then, in our Province, be rendered not only easier but reliable, and in our annual reports we would be enabled to show far more convincingly than at present the dimunition of mortality from preventable diseases, since the Legislature of Ontario established the Provincial Board. We can, therefore, only inferentially assume a diminution by observing the diminution in England from 1871 to 1880. (See Dr. Ogle's report to Registrar-General.) The tables show that at the latter period more men would reach the age of sixty-seven, and more women at sixty-two than in the former. A million men born in 1871–80 would live 1,439,139 years more than if they had been born between 1838 and 1854, the saving of life being the most valuable part, viz., between twenty-five and sixty-five years of age. Altogether an annual addition of lives in Great Britain of nearly two million of years has been given to the nation, in return for the comparatively small sums that have been spent on sanitary improvements. In this decade, 1871 to 1880, deaths from all infectious zymotic diseases, except whooping cough and smallpox, have decreased. Small pox mortality shows improvement coincident with every fresh enforcement of Vaccination Acts. Mortality from this disease increases with age, showing that the protective influence of vaccination requires renewal. For thirty years the deaths of women in labour have continued at something less than five for every thousand children born alive. There are great differences in the mortalities in different parts of the country, the rate in eight of the 647 districts of England and Wales being less than fifteen per thousand, while in two districts it exceeded thirty. The explanation to be sought is in peculiarities of sanitary administration, density of population and unwholesome occupations. In crowded districts air, water and soil are more polluted, competition is more felt, and

want, filth, crime and vice more abundant. Reliable collection of vital statistics would also greatly contribute to diminution to premiums now required by life insurance companies, the basis on which the rates are computed being an accurate registration of births, deaths and marriages. Expectations of life or probabilities have, up to a very recent time, been deduced from the Carlisle tables, compiled from English statutes one hundred years old. Most obviously, from Dr. Wm. Ogle's figures, of diminished death-rate within even the decade of 1871-80 the insurance rate of one period is clearly inappropriate to that of another, and the unjustly large premiums in life insurance should, with the general advancement of sanitation, greatly be diminished.

In December, 1884, at the Washington conference of States Board of Health, the subject of the danger of cholera, smallpox, and other infectious diseases, being brought to our shores by immigrants from Great Britain and different parts of Europe, the nature of the precautions taken at the different sea ports in the United States and Dominion of Canada were related and commented upon. A visit by Drs. Montizambert, Canniff, and Covernton, to the quarantine stations of the port of New York, on their return from Washington, revealed the existence of additional precautionary measures and advantages there existing, than obtained at the sea ports of the Dominion At the quarterly meeting of our Board in February of last year, these measures were discussed, and by order of the Board brought before the Hon. Mr. Pope, the then Minister of Agriculture. Dr. Montizambert also made the additional requirements at our quarantine stations the subject of frequent correspondence, and at the meeting of State Boards of Health at Washington, December, 1885, Dr. Montizambert was able to report to the delegates from Ontario several changes consented to by the Government in answer to questions submitted by him before leaving Quebec for Washington, to which city Dr. Montizambert and Covernton were, by the Dominion Government, again appointed.

In the month of September last, Dr. Rauch, Secretary of the State Board of Health, of Illinois, completed the work he had been engaged in during the summer, of examining all the quarantine ports of the United States, from the Gulf of Mexico to Portland, Maine, with the view of ascertaining the state of preparedness on this continent for resisting the invasion of cholera and other infectious diseases, by visiting the stations of Quebec and Grosse Isle. These quarantine ports, with a few additional precautionary measures he considers, would rank amongst the first on the continent. As, however, the absence of the regulations and appliances at these ports had, as previously mentioned, been noted and reported on by Dr. Montizambert, at the Washington meeting last December, application was made to that gentleman, by his co-delegates from Ontario, for information concerning these alleged deficiencies, and were in reply told that, with one exception, they had been consented to by the Minister of Agriculture, that exception being the deep-water wharf for ships to be moored to during the process of disinfection. This, as a very costly work, had not at that time been consented to, but the quarantine officer had reason to hope that before long the last addition for making the quarantine establishment at that place one of the most perfect ones on this continent, would be undertaken by the Dominion Government. At the twelfth annual meeting of the American Public Health Association, at St. Louis, Mo., in October, the delegates from the Dominion and Province of Ontario had the pleasure of listening to a paper by Dr. Holt, President of the Board of Health of Louisiana, on "The Sanitation of Infected Ships." The quarantine station is provided with a steam launch and a tug to take it alongside of the vessel to be disinfected. On board this launch there is a force pump capable of throwing a large stream of water. The inner linings of the ship having been removed, after unloading cargo, the ship is first thoroughly washed out and bilge water removed. Then a solution of corrosive sublimate is pumped in, and every part of the hold thoroughly scrubbed with it. After these preliminary processes the disinfecting apparatus, for injecting sulphurous acid gas, is brought into play. This is placed on the deck of the launch, and consists of a battery of furnaces. These furnaces have tubes, ten inches in diameter. In each of these furnaces a large quantity of sulphur is ignited, these tubes from the furnaces pass on to a chest, five feet wide and four feet long. Connected with this chest is an indraft tube, and to this a powerful rotatory fan, the revolutions of which are from fifteen to eighteen hundred in a minute, the outlet twenty-two inches by fourteen. The

air, heavily loaded with sulphurous acid gas, passes from the outlet, through heavy India rubber hose, down into the very lowest part, and every corner of the vessel. Previously the ship has been closely battened, with the exception of an open hatchway at the furthest extremity of the point from which the sulphurous acid gas is being pumped in, and the fan and furnaces are kept going until the vessel is filled from the bottom up, under this tremendous pressure and draft. As soon as the sulphurous acid begins to escape at the top, indicating that she is absolutely full of this sulphurous acid gas, the hatchway is fastened down and the vessel allowed to stand for a period of six or eight hours in the gas. Dr. Holt had employed the bichloride of mercury instead of carbolic acid, for the following reasons:

1st. The carbolic acid was not only offensive but injurious on the decks of vessels during the long and hot sun.

2nd. It was expensive, and so far as effects were concerned, it had disappointed him. On the other hand, Bichloride of Mercury has proven to be the most thorough and powerful germicide of all chemicals known and absolutely odourless, absolutely without objection as to consequences, inconvenience, or harmfulness, to those who dealt with it. It was the custom to sprinkle it freely in all the parts of the ship occupied by the crew. Clothing was freely dipt into it and dried, and no harm had been found to any one who had dealt with it. When a captain, officers and crew of a vessel from an infected port are allowed to come to the city, they are kept under surveillance the whole time of period of incubation of the particular disease prevalent at port of departure.

The treatment of cargo then pursued by him may be thus briefly summarized:—As soon as all persons, crew and passengers, have been conveyed from the vessel an acclimated crew of stevedores go aboard, the hatches are opened, and the work of bringing out the cargo, washing, disinfection, and fumigation is accomplished by these acclimated people, and no risk is run of infecting one of those brought on board the ship by allowing him to go down into the hold of the vessel, As to the time of the detention of the ship it will depend on the cargo; briefly it may be said to vary between eighteen hours and three days. In the instance of coffee vessels, the consignees do not wait all this time for their coffee to be brought to the city, but it is at once rapidly unloaded into barges securely closed. Sulphurous acid gas fumes are then driven into it, until the barge is absolutely filled. In this manner the process of disinfection is going on all the time the barge is proceeding to the city. It will be evident that this system of marine sanitation and disinfection at sea ports as practised by Dr. Holt is immeasurably superior to and more reliable than the old fashioned quarantine of forty days, with not only inefficiency but attendant ruinous loss to vessel owners and cargo owners. This coming spring Dr. Holt proposes adopting another method, viz., removing the apparatus from his steamer and placing it on a small tram car to run on a tramway to the end of the wharf, between the vessel lying at it, and the disinfecting rooms for cargo placed on it, so that the hose may be turned outwards into any hatchway or cabin, and inwards into any of his disinfecting rooms, thus leaving his steamer free for inspecting purposes, and always ready to meet incoming vessels. In disinfecting vessels with sulphurous acid gas Dr. Holt requires the decks, cabins, forecastle, hold, bilge, and every available part of a vessel, together with all the apparel of every person on board, to be thoroughly wetted with a solution of Bichloride of Mercury in the proportion of one to a thousand, and after this has been thoroughly done the entire atmosphere within is displaced with sulphurous acid gas, the hatchways battened down, and the ship for twenty-four hours remains steeped in the disinfecting fumes. After this process has been completed the only possible danger that can remain of spread of infection would be the possibility of the germ of cholera or yellow fever incubating in the system of passengers or crew on leaving the vessel after every disinfecting precaution of clothes and body had been taken. Dr. Montizambert returned by way of New York at the invitation of Dr. J. N. Bell, editor of Sanitary Journal, to witness the process of disinfection of rags by superheated steam at 500° Fahrenheit through perforated screws by Bartlett's apparatus.

Dr. Montizambert reports this contrivance as well calculated to accomplish the object in view. That all these minute and thorough precautions against the introduction of infectious diseases at our seaports, and also that uniformity of preventive measures

between the various States of the Union, and Provinces of the Dominion of Canada, are loudly called for, the following extracts from Dr. Blaxall's Report on Maritime Inspection to the Local Government Board at Whitehall, will sufficiently demonstrate. In the present day of rapid steam communication,

"The seas but join,
The nations they divide,"

and the constant stream of immigration from all parts of Europe to this country renders it not only necessary that we should have uniformity in Land Quarantine in the several States and Provinces, but also a similar uniformity at all sea ports. In continuing the use of the term Quarantine, we do not mean the long (and in the light of modern science) uncalled for detention of forty days, but the requisite isolation of the sick, observation, when necessary, of those who may have been exposed to the infection, and the effectual purification of ship, cargo, and general effects of passenger and crew, rarely involving more than a three days' detention, and thus the very serious interference with commerce, and interruption of travel by rail will, by this new system of Maritime and Land Sanitation, be prevented. That both are requisite is sufficiently demonstrated in the Report alluded to, as we learn by it that the various preventive measures against the spread of infectious diseases if attended to at all on board the short line of steamers, bringing transmigrants from different countries in Europe to sea ports in Great Britain or Ireland, from thence to take passage on Atlantic steamers, are only carried out in the most perfunctory way. Until therefore European International Hygiene laws are formulated by the different Governments, and enforced by a committee of International surveillance, the commencement of the work of excluding infectious diseases must principally be performed at our own gates and in our own territories. There will always be the danger in the short passages that emigrant steamers to this country make in the case of small-pox, where the period of incubation is from twelve to fourteen days' of the disease not being developed until some days after the landing of the passengers ; who in that space of time may by railroad have passed through the Provinces of Quebec and Ontario, and sicken with the disease after their arrival in Ohio, Michigan, or other border States. Against this danger in the absence of proof of recent vaccination or re-vaccination within seven years both at American and Canadian quarantine stations, vaccination should be enforced before the emigrants are allowed to leave the ship ; to avoid this detention the steamship companies would, in their own interest, see that this was performed during the voyage by the ship surgeon. Measles, with an incubative period of fourteen days, should, when an epidemic of the disease is known to have been prevalent at the port of departure, be made the occasion for detention at the Isolation Hospital on maritime quarantine ground until that time had elapsed, if it was known that the epidemic at the port of departure had been of a very severe type, and of a very malignant character.

The incubative period of cholera being ordinarily only of a few days duration, if any infected passengers were on board, the disease would have been manifested long before the completion of the voyage, and the steamer, of course, on arriving at the quarantine station, would be disinfected by Dr. Holt's process, and the passengers landed, those who had been exposed isolated, and the baggage, cargo, and ship fumigated before proceeding to her destined port. In the different American States and Provinces, if Local Boards of Health were established along the line of railroads in every township or municipality traversed, provided with Medical Health Officers and Sanitary Inspectors, these officers enjoined by statutory enactment to employ quickly the power vested in them by their several legislatures, such as immediate provision of isolation hospitals for the infected, police surveillance of all who had been exposed to the disease, fumigation and thorough cleansing of all lodging houses that had been occupied by the sick, and in the instance of small-pox, compulsory vaccination of school children and adults, there would be little danger of the spread of infection, and the serious interruptions of commerce, great suffering and loss of life now occasionally happening would be effectually prevented. The work of prevention of spread of small-pox from the Province of Quebec to our Province of Ontario undertaken by our Board the first of September, and continued to the present

date, the Secretary, Dr. Bryce, will be found to have dealt with. That it has been well devised and efficient, Dr. Rauch, who was present for some days in Montreal, has borne testimony.

A very brief synopsis of portions of Dr. Blaxall's report on the sanitary aspects of emigration, and immigration from, and into the United Kingdom, will suffice for showing the urgent necessity for these minute precautions and incessant vigilance at all United States and Canadian ports. "The said emigration consisting of two elements, British and foreign, the former, natives of Great Britain and Ireland, and the latter, of all other nationalities who may elect to come over from the Continent for the purpose of reimbarking from one or other of the British ports for the United States, British North America, or other places, and who may thus be designated as transmigrants, consisting principally of Germans, Poles, Russians, Jews, Norwegians, Swedes, Danes, Finlanders—The principal Continental ports from whence transmigrants ship to British ports to take passage to America and Canada, are Hamburgh, Christiana, Gottenburgh, Copenhagen, and Bremenhaven. In these continental steamers a great deal of crowding exists, in a passage, usually of four days, but which sometimes extended to ten, and when in stormy weather the passengers are confined to steerage, a totally inadequate allowance of fresh air—water-closets filthy, etc.

The lodging-houses at the various ports to which these foreign emigrants too frequently resort until the sailing of the vessel for America, are unregistered and frequently filthy, sometimes five adults sleeping in a room with a cubic capacity of 168 cubic feet per individual.

At some British ports, isolation hospitals are provided for those found infected, but in some instances inadequate space provided, notably at Cork, where the accommodation consists of one ward only, and one small convalescent room. In comparitively few emigrant steamers are hospitals for the sick provided, and when they do exist, are not always properly adapted for infectious diseases." Dr. Blaxall also reports that no daily systematic inspection is made by the surgeon with the view of detecting premonitory symptoms of infectious disease, consequently immediate isolation is not carried out. Colonial Governments, Canada excepted, before granting free passages require, among other qualifications, that every applicant shall furnish a certificate that he is free from infectious disease, and has been vaccinated, or had small-pox. The shipping companies observe no such precautions, their agents having no instructions to enquire into the health of intending emigrants as regards freedom from infectious diseases. The inspection prior to embarkation on the tug-boat is usually conducted in a careful, and painstaking manner, but the noise, bustle, and confusion, must materially militate against the thorough character of the investigation demanded

In London the emigrants embark on the dock, and pass down the river to Gravesend, sleeping on board, and are only mustered for inspection the following morning, obviously after free opportunity has been given of spreading infection on the ship. At Queenstown, the emigrants are inspected on the wharves in the open air, obviously an insurpassable barrier to satisfactory examination." A great many other very important particulars on the subject of incomplete attention to the danger of spread of disease by emigrants, will be found in his very valuable report, but from it enough has been quoted for demonstrating that, until harmony in European Legislation on the subject of international hygiene is arrived at, the work of protection on this continent from epidemic disease must, in a great measure, rest on the American and Canadian Governments. Experience has amply shown that the spread of epidemic diseases may, by timely precautions, be prevented, and has also shown that they may be, in any locality, by early attention, stamped out.

If ship surgeons who would endeavour to recognise the existence of contagion at its first inception, and were selected from the experience they had gained of the best methods for arresting its extension, were provided by steamship companies, with the requisite means, including properly isolated hospitals, ventilated from above, and the requisite germicides at hand, would carefully prepare a history of the cases, country from which the emigrant had departed, history of exposure to infection on the road to British port of embarkation, uch information would enable the medical authorities on this side of the Atlantic to

cable to the American Consuls at the port the vessels had left, such particulars of the case or cases as would insure more caution in the examination of emigrants at the port of departure from which the persons affected during the voyage had taken ship. Our very ignorance of danger lulls us into a fancied security, where even a little knowledge might conduce to safety.

All these precautions, however, by ship surgeons necessarily imply experience as well as theoretical knowledge, and in order to obtain such a necessary combination for the attainment of the object in view, the remuneration would require to be on a vastly higher scale than that at present given. The accommodations on board for the doctor should also be of a very superior character to that now usually to be found on board the steamers for these officers. Given these alterations in the treatment of ship doctors, there would be no difficulty in finding men, by professional education and ability, equal to any emergency.

In the report of the Committee on Disinfectants, of the American Public Health Association, the following conclusions are arrived at. The most useful agent for the destruction of spore-containing infectious material are :

1. Fire, complete destruction by burning.
2. Steam under pressure 230° Fahrenheit for ten minutes.
3. Boiling in water for one hour.
4. Chloride of Lime, a four per cent. solution.
5. Mercuric Chloride, Corrosive Sublimate, a solution of this salt and of Permanganate of Potassium in pure water in the proportion of two drachms of each to the gallon; Solution of Chloride of Lime four ounces to the gallon.

For the distinction of infectious material, which owes its infecting power to the presence of micro-organisms, not containing spores, Dr. Sternberg recommends :

1. Fire.
2. Boiling in water for half an hour.
3. Dry heat, 230° Fahrenheit for two hours.
4. Chloride of Lime, one to four per cent. solution.
5. Solution of Chlorinated Soda (recently prepared), five to twenty per cent. solution.
6. Mercuric Chloride, solution of 1:1000 to 1:4000.
7. Sulphur Dioxide, exposure for twelve hours to an atmosphere containing at least four volumes per cent. of this gas preferably in the presence of moisture.
8. Carbolic Acid, two to five per cent. solution.
9. Sulphate of Copper, two to five per cent. solution.
10. Chloride of Zinc, four to ten per cent. solution.

For Excreta.—(*a*) In the sick room for spore-containing material :

1. Chloride of Lime in solution, four per cent.
2. Mercuric Chloride in solution, 1:500, with an equal quantity of Potass Permanganate.

In the absence of spores.

3. Carbolic Acid in solution, five per cent.
4. Sulphate of Copper in solution, five per cent.
5. Chloride of Zinc in solution, ten per cent.

In Privy Vaults.—Mercuric Chloride in solution, 1:500, or a concentrated solution containing four ounces of Mercuric Chloride, and one pound of Cupric Sulphate to the gallon of water. Eight ounces of this solution to the gallon of water will give a dilute solution for the disinfection of excreta containing about 1:500 of Mercuric Chloride, and 1:125 of Cupric Sulphate.

For the surface of masses of organic material in Privy vaults.—Chloride of Lime in powder.

For Clothing, Bedding, etc.—(*a*) Soiled underclothing, bed linen :

1. Destruction by fire.
2. Boiling for an hour.
3. Immersion in a solution of Mercuric Chloride, of the strength of 1:2000, or of solution No. 4 for excreta, diluted by adding two ounces of the concentrated solution to a gallon of water.
4. Immersion in a two per cent. solution of Carbolic Acid for four hours.

(*b*) Outer garments of wool or silk, and similar articles which would be injured by immersion in boiling water, or in a disinfecting solution :

1. Exposure to dry heat at a temperature of 230° Fahrenheit for two hours.
2. Fumigation with Sulphurous acid gas for at least twelve hours, the clothing being freely exposed and the gas present in the disinfecting chamber in the proportion of four volumes per cent.

(*c*) Mattrasses and blankets soiled by the discharges of the sick :

1. Destruction by fire.
2. Exposure to superheated steam, twenty-five pounds pressure for one hour. Mattrasses to have the cover removed and freely opened.
3. Immersion in boiling water for one hour.
4. Immersion in the blue solution of Mercuric Chloride and Sulphate of Copper, two fluid ounces to the gallon.

Furniture and articles of Wood, Leather, or Porcelain.—Washing several times repeated with

1. Solution of Mercuric Chloride 1:1000, or the blue solution, four ounces to the gallon of water.
2. Solution of Chloride of Lime, one per cent.
3. Solution of Carbolic Acid, two per cent.

For the person.—The hands and general surface of the body of attendants, of the sick, and of convalescents at the time of their discharge from the hospital:

1. Solution of Chlorinated Soda, diluted with nine parts of water.
2. Carbolic Acid, two per cent. solution.
3. Mercuric Chloride 1:1000, recommended only for the hands, or for washing away infectious material from a limited area, not as a bath for the entire surface of the body.

For the dead—1. Envelop the body in a sheet thoroughly saturated with Chloride of Lime in solution four per cent.

2. Mercuric Chloride in solution 1:500.
3. Carbolic Acid in solution, five per cent.

For the Sick Room and Hospital Wards.—(*a*) While occupied wash all surfaces with

1. Mercuric Chloride in solution; blue solution with Sulphate of Copper may be used.
2. Chloride of Lime in solution, two per cent.; Carbolic Acid in solution, two per cent.

(*b*) When vacated.—Fumigate with Sulphur Dioxide for twelve hours, burning a pound of Sulphur for every 1000 cubic feet of air space in the room, then wash all surfaces with one of the above-mentioned solutions, and afterwards with soap and water. finally throw open the doors and windows, and ventilate freely.

Merchandise and Mails.—The disinfection of merchandise and of the mails will only be required under exceptional circumstances, free aeration usually sufficient. If disinfection is necessary, fumigation with Sulphur Dioxide, as recommended for woollen clothing, will be the only practicable method of accomplishing it.

Rags.—(*a*) Rags which have been used for wiping away infectious discharges should be at once burned.

(*b*) Rags collected for the paper-maker during the prevalence of an epidemic should be disinfected before they are compressed in bales by 1st. Exposure to superheated steam (twenty-five pounds pressure) into the interior of the bale by means of huge screws forced into centre, and thus insuring penetration of steam to every portion of the bale.

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JOSEPH H. RAYMOND, M. D.
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A. R. LEEDS, M. D.
A. H. WALKINS, M. D.
GEORGE H. ROHE, M. D.

Members of Committee.

Dr. Sternberg, Chairman of this Committee on Disinfection in Infectious Diseases, was appointed by the United States Government a delegate to the International Sanitary Congress, held in May last at the City of Rome, and had there for colleagues, on a committee of disinfectants, Professors Koch (Germany), Proust (France), Dr. Thorne (England), Professors Eck (Russia), Seminola (Italy), and Hoffman (Austria). Standard disinfecting agents, similar to those adopted by the Committee of the American Health Association, were adopted.

That sanitary administration can do much towards lowering mortality in infectious diseases the following evidence, taken from the forty-fifth annual report of the Registrar-General of England, Dr. Ogle, is adduced:

Decline in scarlet fever was very considerable, the annual deaths per million having fallen from 972 to 716. In measles less, being only 440 to 378. The registered deaths from diphtheria fell from an annual average of 185 per million to 121. The mortality from whooping cough remained practically unchanged from that of the preceding decennium, the fall being only from 527 to 512. Dr. Ogle remarks on this that, owing to the very early age at which whooping cough usually occurs, and the consequent inability of removing the sick from the healthy, this disease is less amenable than most other zymotic ailments to sanitary control.

The deaths from fever, including typhus, enteric fever, and ill-defined forms of continued fever, fell from an annual average of 885 per million to 484, a decline of no less than forty-five per cent. The most satisfactory of all the declines shown in the table, not only because it is the greatest in amount, but because enteric fever, to which is due in the present day the main bulk of the deaths attributed to fever, is, of all diseases, putting aside the effect of vaccination on small-pox, the one which is most directly and largely affected by sanitary measures, so that the decline in mortality under this heading is the best test available of the efficiency of sanitary administration. The deaths from diarrhœa fell from an annual rate of 1,076 per million to 935, showing an annual gain of 141 lives for each million. As this disease is more directly and manifestly affected by meteorological conditions than that from any other zymotic disease, Dr. Ogle considers that the decline was as much due to a series of comparatively favourable summers as to any sanitary measures that may have been adopted. The deaths ascribed to malignant disease in the decennium, 1851 to 1860, amounted to 317 annually per million. In the next decennium, 1861–70, the mortality had risen to 387, and again it rose in 1871–80 to 473. So that in the course of twenty years the mortality under this heading apparently increased by nearly fifty per cent. The increase, as shown in the successive annual reports has been steady and progressive. This in a measure is attributed, by the Registrar-General, to the present improved diagnosis and more careful statement of cause on the part of medical men. The mortality from phthisis showed a very remarkable diminution, there being an annual gain of 359 lives to a million living. The mortality from liver disease among men engaged in the liquor trade is six times the average for males generally.

Relative to the increase of small-pox in the two first years of the decennium, 1871–80, alluded to at the commencement of this report on epidemics, Dr. Ogle considers

the rise was entirely due to the very serious outbreak which marked the two first years of the decennium, viz., 1871–72, and which led to the compulsory appointment of Vaccination Officers by the Boards of Guardians, and consequently to a more stringent enforcement of vaccination. In the forty-third annual report for 1880, it was shown that when statistics of small-pox are given by natural periods, that is to say, by periods that coincide with the successive improvements in the enforcement of the Vaccination Acts, there has been a gradual and notable decline in the mortality from this disease. It has been further shown that this decline has been entirely due to the diminished mortality of children, and especially children under five years of age, and that in the later periods of life the mortality has not only not decreased, but has actually risen slightly among young persons between ten and fifteen years of age, but very greatly among persons older than this, and lastly, that this increase has been greater the more advanced the term of life. As was pointed out, Dr. Ogle remarks in the forty-third annual report, "There can be only one adequate explanation of this alteration, and that explanation is, that vaccination confers a considerable immunity from small-pox, but an immunity which is not only less than that conferred by an attack of small-pox, but much less permanent, its protective influence gradually dying out and requiring renovation. Before vaccination came into use but few persons escaped having small-pox at some time or other of their lives. The great majority had it when young, and of these a large proportion died, causing a very high death rate in the earlier age periods. But those who survived the attack enjoyed a practically complete immunity for the rest of their lives, and as they formed a considerable proportion of the population at the later age periods, the small-pox death rates at those later periods of life were very low. But when vaccination came into use, and in proportion as its use became more and more general, the relative conditions of the different age periods, as regards immunity, were materially altered and partially inverted. Childhood, previously altogether unprotected, now received a very considerable immunity, while the later ages, previously much protected, now had their immunity considerably diminished, and the more so the later period of life, and the more remote, therefore the date of vaccination.'

All of which is respectfully submitted,

C. W. COVERNTON,
P. H. BRYCE.

APPENDIX VI.

FIRST REPORT ON TYPHOID FEVER AT THE ASYLUM FOR THE INSANE, KINGSTON.

To the Chairman and Members of the Provincial Board of Health,—

GENTLEMEN,—Dr. O'Reilly, Inspector of Prisons and Asylums, having expressed a desire for the advice and assistance of the Provincial Board of Health in investigating and remedying the causes of the repeated occurrences of typhoid fever in the asylum at Kingston, Drs. Oldright and Rae were requested by the Hon. A. S. Hardy, to proceed with Dr. O'Reilly to Kingston.

Our investigation was commenced immediately after our arrival at Kingston, on the 21st of April. We may premise by stating that the asylum was built many years ago, and was, subsequent to the Confederation of the Provinces, handed over by the Dominion Government to the Government of Ontario.

We first proceeded to obtain as complete a history of the outbreaks of Typhoid Fever, and of the single occurrences of that disease, as it was possible to get. The information for this history was obtained (1) from the officers, attendants and other employees, (2) from the Case Books of the medical officers, and (3) from the record of deaths in the Discharge Book, prior to the keeping of Case Books. The information from attendants was only taken regarding the time prior to Dr. Metcalfe's coming to the asylum.

Thomas Evans stated that his first recollection of typhoid fever in the Institution was shortly after Dr. Dickson came to it—during 1868—when there were five or six cases.

Thomas Lannigan, male attendant, came to the asylum on 1st Febuary, 1869. He remembers that in ward No. 7, on the first flat, there was typhoid fever In 1870 or 1871. There were about twelve or fourteen cases, and about seven deaths occurred at this time.

John McManus, storekeeper, was employed in No. 4 ward. He remembers that in 1870 or 1871 there were many cases of typhoid fever. Cannot remember the number, but would say not less than eight nor more than twenty. There were occasional cases on and off up to the time that Dr. Metcalf came.

Mrs. Darragh, female attendant and nurse, remembers the existence of typhoid fever from about 1873, when there were about sixteen cases and two deaths; next about 1877, when there were two cases and one death.

From Drs. Metcalf and C. S. Clark, we ascertained that, continuing a sketch of the history on from the time that the former came to the asylum (1878), there have been occasional cases of typhoid fever; and that during the past two years it has been very wide-spread and formidable. There have within that period been between forty and fifty cases: the mortality, however, has been low, three deaths only having occurred from it.

There were also given to us the names of six persons who had been visiting at the asylum, or at the residences connected with it, five of whom had taken typhoid fever either during their stay at the asylum, or shortly after returning home; and one had an attack of diarrhœa. One of these persons died at his own home.

Deaths from typhoid fever recorded:—1869—November 13th, December 20th. 1870—April 1st, April 12th, April 17th. 1872—May 4th. 1874—October. 1875—June 12th. 1881—July 15th. 1882—April 17th. 1883—February 28th. 1884—April 10th, 15th.

We append a record of the cases which have occurred from 1878 to 1st of May, 1884, furnished at our request in tabular form by the medical officer.

It will be seen that the cases have been distributed pretty generally over the main building and the Superintendent's house; that there have been but few of the cases in any other building, and that of those who are confined exclusively to the so-called cottages none have taken the disease; none of the patients in the cottages have had the disease, the three persons who have had it being nurses, one at least of them spending the day, or a portion of it, in the main building.

Another fact worthy of notice, is, that in the endemic of 1884, the persons attacked are comparatively new comers; more than half of them having come to the Institution during the past winter, and the rest within a year of the time they were attacked; all of them since the date of the last preceding endemic.

In addition to the above history of the typhoid endemics, we have to add the fact stated by the medical officers, that most persons who use the water supplied to the Institution, unless it is boiled or filtered, suffer from diarrhœa. Dr. Clark states that he suffered from continual diarrhœa until he discovered this fact: and that now a single glass of unboiled and unfiltered water will invariably produce diarrhœa.

Reference may also be made to the fact that a death occurred some years ago from puerperal fever in Dr. Metcalf's house.

Conclusion from the foregoing history.—1. Whilst typhoid fever has existed on and off for sixteen years at the asylum it has been confined to the main building and Dr. Metcalf's house, with the exception of two cases in the cottages. It has not made its appearance in the old cottage, nor in the new if we except the case of Mrs. Clancy, who is *employed in the main building* and sleeps in the new cottage.

2. Whilst the water is proven bad, and must have a strong predisposing influence for evil, it does not as yet seem to have been able in and of itself to give rise to typhoid fever; inasmuch as it has not produced any cases at the cottages, in persons who remain there entirely.

3. We are therefore compelled to seek the immediate cause or causes of the fever (*a*) in influences acting upon the air of the main building and of Dr. Metcalf's house; or (*b*) influences acting upon the food or water supplied to those buildings, and not hitherto acting, at least with sufficient force, upon the other buildings. We shall return to a consideration of these last-named influences. We shall now describe our investigation of the influences acting on the air of the two buildings before referred to.

Ventilation and Drainage of the Main Building.—We may premise by stating a fact or facts, which have to be constantly repeated, namely, that the negative evidence of the senses, as to the existence of "sewer gas," is valueless: whilst it may be, and often is, detected by smell, it may exist inodorous and unperceived. Further, while vitiation by respiration to such a degree as to be injurious, may generally be perceived by the senses of most people, if they have just come in from the outdoor air; still, its impurity from this source too, may be overlooked by persons whose sense of smell is not acute, and by any person who has been for some time in the apartment where the vitiated air is.

We examined the wards and dormitories, and with the exception of a little passage-way on the ground floor on the women's side, and in a low-ceiled room on the top flat—not originally intended for occupation by patients—the air revealed nothing unpleasant *to the senses.*

1. Air of a suitable temperature is propelled into the wards from flues opening at the upper part of the walls, and the impure air is taken off by flues opening near the bottom. These latter flues open at their upper extremities into the dome, between it and the tank-room, so that the air from them has access to the tank-room. We did not consider it necessary to measure the amount of air circulating through the wards; as a matter of interest we hope yet to have this done.

2. We also examined the ventilation through the water-closets, urinals, baths and basins of the wards, and found everywhere a strong downward current through the soil-pipes. There are no traps to any of these appliances. The foot of the soil pipe is connected by a brick flue with the very lofty central smoke stack of the furnace, creating

the strong, constant draught referred to.* At our request Dr. Clark tested the draught at four a.m., just before the furnace flues were kindled up, and found it quite strong. This smoke stack is used in connection with the furnace of the engine, which pumps up the water supplied to the Institution and with all the boilers-furnaces, and hence is always heated in summer as well as in winter.

3. The description given does not apply to the soil-pipe, with which the officers closets (in the central portion of the building) are connected. This soil-pipe opens above the highest closet, into one of the ventilating flues, and this again into the dome very near to the tank-room. This is a very objectionable feature and will be referred to again, when we come to speak of the water supply.

4. The bowls of two of the closets just mentioned were broken, and as they are of that objectionable pattern known as the "pan-closet," an escape of the gaseous contents of the foul sewers was thus permitted.

5. We could not obtain accurate information regarding the drain into which this soil pipe opens, where it led to, whether it was trapped, whether it had an outside vent in the rain-pipe just outside the building at that point. There was a tradition extant that it was connected with a cess-pool; hence it was determined that the drain should be uncovered and that it should be given a connection with the rain-pipe, so as to establish a through ventilation, as directed in Schedule A of the Public Health Act of 1884, and that it should be traced towards its debouchment.

6. We next examined the basement, the principal point of interest being the passages for conveying and heating the air to be supplied throughout the building. A wide central passage runs under the whole extent of the building, and on each side of it two narrow ones containing coils of steam-pipes, and from which flues lead up into the building, opening, as before described, at the tops of the various apartments. Cold air is driven by a fan into and along the central passage, and thence passes into the narrow passages over the steam-pipes and up the flues.

7. At a spot in one of the passages a little stream of water, running down the wall near the flagged floor through a dirty looking opening, was pointed out by Dr. Metcalf. On stooping down an unpleasant odour was noticed; closer examination showed that a current of air blew upwards from a crack between the wall and a flag-stone, and that the odour was carried on this current. We collected some of the water.

8. Suspicion pointed to one of the drains, or the supposed cess-pool, as the source of this streamlet; and it was agreed that this should be traced out the next morning. The spot in which it existed is in the vicinity of the place where the soil-pipe in the central building makes its exit.

9. Whilst considering where the water went to, Dr. Metcalf pointed out that there were channels or surface-drains under the flags carrying off the drip from some of the steam-pipes. It was not known whether those were trapped, what connections they had, nor where they ran. It was arranged that they should be traced on the following day.

10. The air supplied to the fan traverses a damp subterranean passage nearly 200 feet long, the mouth of which is about 180 feet from the mouth of the main sewer, and about ninety feet from the slip into which sewage sometimes flows. We cannot see any object in bringing the air up this unwholesome passage from a somewhat objectionable source, instead of bringing it from the immediate vicinity of the building.

The Cottages.—These have so far escaped any serious invasion of the disease; but we must bear in mind that if a first case be imported, implanting germs in the drains of one of these cottages, and there are any defects in the inside drainage by which they can escape into the inside of the buildings, a rapid spread of the disease may take place. Let us then see if there are any defects which should be remedied.

The New Cottage.—On approaching the new cottage we noticed that a vent pipe about four feet high, rising from the drain underneath the windows of the east dormitory, was exhaling steam from the drain beneath. It was agreed that this vent-pipe should be continued up to the roof, as well as a similar one on the west side. There are two vents from the drains inside—two small pipes carried up from the waste-pipes of the sinks in

* See page 112.

the second floor. We have no plans to show whether these form a through ventilation or not.*

We tested the baths and basins, and could not detect any regurgitation when the drain was flushed by water from the latrines. Ventilation pipes are carried from beneath the seats of the latrines, and from the urinals to ventilating flues.

In the Old Cottage.—Rough plans of the plumbing and of the changes that are necessary are appended.

Dr. Metcalf's House.—We have here a flat masonry drain leading from the house to the cess-pool, also of masonry, about 5x3x4 feet, with a mid-feather trap in the cess-pool, no trap intervening between this cess-pool and the house. Just outside the house wall, a breathing tube runs up, but it terminates above, under the cornice, in close proximity to the windows and balcony. On the day of our visit, even this had slipped off the iron pipe arising from the drain. The drain below the cess-pool, also of masonry, is said to leak.

The cess-pool should be removed, and a glazed-tile drain laid down, instead of the stone one. If this cannot be done throughout the entire length of the drain, it should at least to a spot where there is a steep fall, say some sixty or seventy feet away from the house; and in that case a vent-pipe should be carried up at the point of junction of the tile and masonry drains. The outside vent-pipe should be carried up to the roof.

There is no inside vent-pipe; the soil-pipe ends at its junction with the trap of the closet. It should be continued up through the roof, thus making the through ventilation directed in Schedule A of the Public Health Act of 1884.

The "pan-closet" is the one in use. Its filthiness is pointed out in pamphlet number 11, of the Provincial Board of Health; it should be replaced by a hopper, with a good swirl of water automatically arranged, and with the trap brought close to the hopper, and a good flush pipe. The bath and basin waste into the dip of the trap. They should have their own traps, properly vented, and should waste directly into the soil pipe.

The trap of the basin waste downstairs used to syphon, until a small vent was placed in it. There should be one also to the trap of the kitchen sink. The cost of these alterations in the plumbing should not be great.

The two points of investigation which it was arranged should be carried out, have yielded the following results:—

It was found that a cess-pool existed, taking the sewage from the officers' closets in the main building. It was circular, about twelve feet in diameter, and twelve feet deep. It had no outlet, and was full, as far as it could hold, of sewage: a masonry drain led to it.

This, Dr. O'Reilly immediately caused to be replaced by a glazed-tile drain, which will connect with the nearest tight drain, the cess-pool being removed.

If, on examination, the soil is found to be largely polluted with sewage, it should be removed, and fresh soil substituted.† The streamlet down the basement wall probably arises from this source as was suspected.

The surface-drains running under the flags in the basement, were found to be connected with a sewer under the floor of the air shaft, at the back of the main building. From the odour perceived on raising one or two of the flags, it is assumed that there was no trap between the sewer and these drains. The steam exhaust enters the drain, and by the alternate expansion and contraction caused by the puffs of steam, the sewer gas, which would in any case find its way up into the drains, is assisted in that direction. If a sufficient stream is found to pass down these drains to require that they shall be connected with the sewer, they will need to be protected by a sufficient trap with vent-tube. In the meantime, Dr. O'Reilly has ordered them to be disconnected, and the head of the sewer to be tightly closed. It must be remembered that all the air propelled to the building has to

* It has since been ascertained that they do, and that there are also other openings, rain-leaders, etc., running up to the roof clear of all windows, etc.

†Since the above was written, the drain has been uncovered, and the soil up to the building found to be saturated with filth. This has been completely removed, and cinders and ashes substituted.

pass through the passage-way overlying these drains, and that they are surface drains covered by flags,

In some of the dining-rooms, the sinks became a favourite storage place for rats,—rotten wood, decaying scraps, etc., making a very disagreeable odour. This is being remedied. In some of the dormitories, there are old unused sinks connected with a drain. These must be cut off by the Superintendent.

The Water Supply.—An account of the condition of the water, as determined by several analyses made by Dr. Ellis, and Mr. Thomas Heys, is contained in the last report of Dr. O'Reilly, upon the asylums for the Province. It is there shown that the water is unfit for use in its present condition.

We endeavoured to ascertain the source or sources of impurity. Dr. Metcalf drove one of the members of your Committee up the little Cataraqui Creek, and pointed out a marsh, which he said extended some miles back. The width of this so-called creek, and the amount of marsh would seem to vary very much with the season of the year. The relative positions of the marsh, the estuary into which the creek expands, the Bay of Quinté, Lake Ontario, and the supply-pipe, are shown in the accompanying sketch.

[See map in the Department of Crown Lands.]

We were informed by Dr. Clark, that he had observed vegetable matter floating down in a current, which he was able to trace, from the creek to the neighbourhood of the supply-pipe. We are also informed that the water of the Bay of Quinté itself is considered bad by mariners, and that they do not supply themselves from this Bay, if they can avoid so doing. We had no means of obtaining other evidence on this point.

A plan, kindly furnished by Mr. Tully, is also appended, showing the drains and water-pipes of the asylum. At the lower part of this plan will be seen a blue line, marking the position of the water supply-pipe—a nine-inch iron flexible pipe with "universal" joints. The mouth of it is twenty-six feet below the surface, four feet above the bottom of the Bay, and 300 feet from the main shore. Immediately east of this pipe is a wharf, consisting of a cribwork of loose, unhewn stones. The south-west corner of this cribwork is only 150 feet from the mouth of the supply-pipe. The wharf will be seen to enclose a slip or basin about sixty-two feet wide, and 150 feet long, the entrance to it being about eighty feet from the mouth of the sewer marked with a purple S. With an east wind blowing, feacal matter and other sewage has been seen at the head of the basin. A channel leads through the head of the slip marked A, into the Bay. It is arched over on top. It is about two feet wide, Mr. Tully thinks, and extends to the bottom, or nearly so.

The current in the bay outside is said to flow eastward, past the mouth of the supply-pipe, at the rate of about two miles per hour on the surface; but this is in calm weather. With the conditions we have described: the sewage driven up into the basin, and churning about in it, some of it being probably forced out through the channel at the head of the slip, and through the loose stones—with these conditions, there is strong reason for believing that with opposing and eddying currents, some of it does at times reach the mouth of the supply-pipe, even if we suppose that all the *joints* are perfectly tight. Whilst the mouths of the sewer and supply-pipe are in a direct line 450 feet apart, with a main surface current eastward; still it must be borne in mind (1) that counter-currents are frequently found in such positions:—the St. Lawrence itself furnishes many examples of this, and bottom currents in Toronto Bay, and other places run in different directions; (2) sewage is found locked at the head of the basin, (3) and in all probability is forced up through the channel A, across, and above the pipe, and also through the stone work; (4) opposing forces of the general current eastward and of the body of water here being forced westward, may cause the water to flow downward, and onward, (5) gravitation aiding it, (6) any vegetable matter brought down, would render to a small portion even of sewage, a fruitful soil in which to germinate.

It is, of course, useless to theorize as to the directions of these currents, with the expectation of deducing from such theoretical speculations any positive conclusions. To obtain practical deductions, numerous and prolonged observations would have to be made with floats, and other instruments. A similar remark will apply as regards the

water from Cataraqui Creek and the Bay of Quinté. Before undertaking such extensive observations, it would be well to await the result of the action of the Hyatt's filter, which is being put in, as described in Dr. O'Reilly's report, analyses of the water being made from time to time, especially when a strong east wind has been blowing for several hours, and observations of the effects on those who use it after filteration by this process.

On Dr. Oldrights return to Toronto he called upon Mr. Heys, who had made two of the analyses, and communicated our suspicions to him. They were more than shared by him, for, on referring to his analysis, he pointed to the existence of phosphates, as being indicative of sewage contamination. The water of Lake Ontario does not contain phosphates naturally, and they could only come into this water from sewage or manure. He also called upon Dr. Ellis, and his opinion of the significance of phosphates was similar to that of Mr. Heys. Dr. Ellis, in his report, says nothing about the presence or absence of phosphates. Both gentlemen were of opinion that the relative positions and conditions of sewer, slip, and supply-pipe, are not satisfactory.

We have already alluded to a source of pollution of the water within the building: the close proximity of the tank-room to the ventilating flues of the centre portion, especially to that which leads the gases up through the soil-pipe, from the cess-pool. This room not only has communication with the body of the dome in which these flues are, but there are two large slits in the wall for the passage of a belt. These flues ought to be carried on through the roof of the dome. Attention should also be given to the ventilation of the tank-room itself.

CONCLUSIONS AS TO THE CAUSES OF TYPHOID FEVER AND OTHER SICKNESS.

We think that the facts warrant the conclusions that the condition of the water supply is such as to produce general impairment of health and vigour, and to predispose those who use it to be peculiarly susceptible to the action of any specific or exciting cause of disease. We think the condition of the drains in and under the main building and in Dr. Metcalf's house, and the plumbing of the latter, and of the officers' closets, were such that the specific germ of typhoid fever being once introduced would multiply rapidly and extend throughout the buildings referred to.

Recommendations.—We would here recapitulate and group together in brief form the recommendations scattered through this Report:—

That the ventilating flues be made to discharge their gaseous contents above the roof. That the soil-pipe from the officer's closets be likewise carried up through the roof. That a counter-current be established through the rain leader, it being for that purpose connected with the drain at or near the junction of the soil-pipe, no trap intervening between the two, in accordance with the Public Health Act of 1884, Schedule A.

The masonry drain and cess-pool, Dr. O'Reilly has already ordered to be removed, and replaced by a glazed-tile drain. All the flat-bottomed masonry drains would be better to be changed by degrees. The connection of the drains under the flagged air passages with the sewer has already been severed. If the stream of water be such as to require a drain, this may be properly trapped and connected with a sewer.

That the air-shaft be done away with, and that air be pumped from directly outside the building.

The rain-pipes which open above near windows must be trapped.

That in Dr. Metcalf's house the soil-pipe be extended up through the roof. Bath and basin-trap to be near the bath and basin, and to have breathing tubes.

The outside vent should be made tight, and should be carried up on to the roof. That the drain and cess-pool be done away with, as in page 107 of this Report.

That the breathers from the drains just outside the new cottage be carried through the cornices to the roof.

That a counter opening from the drain just outside the trap for Mott's latrines be carried to the roof, as required by Schedule A. of the Public Health Act of 1884.

In the old cottage there should be a ventilation of the pipe now closed at both ends thus necessitating a forcing of the upper trap. The bath and basin wastes should be as represented in the diagrams. Great care should be taken that nurses attend carefully to disinfection of stools as recommended in pamphlet No. 14 of this Board.

That fresh analyses should be made of the water after filtration by the new method, and especially after the action of east winds.

That milk should not be stored in the basement, as already described; but that an outside dairy be built. Milk has been proved by several epidemics of typhoid fever to be one of the most fertile bearers of the germs of that disease.

The preceding portion of this Report was written after the first visit of your Committee of investigation.

It was arranged by telephone that we should meet Mr. Tully and Dr. O'Reilly at the asylum on the 9th of June; but from some misunderstanding on the part of the clerks in the offices of these gentlemen, they failed to meet us there. By this time some of the drains had been uncovered, and it was found that rain-pipes established a direct communication from the drains to some of the windows.

One of these drains is rendered all the more offensive from slops from the dairy being emptied into it at the sink-hole in front. This is now closed and a kitchen sink is to be put in, and run into another drain.

By the time of our next visit Dr. Metcalf was to ascertain whether this offensive drain runs under the building, connecting with the drain under the air shaft, or runs outside the building.*

There was also pointed out on this occasion a bath in Dr. Clark's apartments, with a running trap which empties itself by syphonage every time the water is run off. Dr. Clark had a turn-tap on the waste pipe.

We recommend a breathing tube to this as well as to a basin in the dispensary which syphons in the same way. Some other minor points were discovered and attended to.

On the 16th June we again visited the asylum in company with Dr. O'Reilly and Mr. Tully.

All the recommendations made were concurred in by these gentlemen. On this visit it was found that the overflow from the tank led directly to the drain without any cut-off or vent between the sewer and the pipe, the pipe itself being trapped at the tank only, and there being no breather to prevent gas being forced through to the tank. The same was also found in the tanks at each end of the building. This is to be remedied by running up a breather from the overflow pipe outside the trap, and running another breather from the point where this pipe joins the drain, thus securing a current of air through the overflow pipe. The tank overflows several times a day, so that the water in the trap is frequently changed.

It was also found that the drain from the meat pantry empties into the flat drain under the air passages, already referred to as being in such a serious condition. As this flat drain has little surface channels running up from it under the flags in all directions, the only plan that can be adopted is to place a brick or masonry wall across under the flags and running into the ground down to a solid foundation, so as to cut off all emanation from below, and then to put in a good trap and to lay a tight drain below this point.

The rain pipes leading from drains to windows have all been ordered to be trapped, and vent-pipes put in at the several points required.

The other recommendations have been concurred in by Mr. Tully and Dr. O'Reilly, and we hope will be ordered by the Commissioner of Public Works.

We have in our possession copies of several analyses of water, but we do not consider it advisable to enter further into their consideration till further analyses have been made, both of filtered water and of unfiltered water from various points and under various circumstances of wind, season, etc.

* It has since been ascertained that the latter is the case.

We may add that we saw the working of the Hyatt's filter, and were much pleased with it. It is hoped that the condition of the water supply will be much improved by its use, thus doing away with the predisposing influence for evil of the supply as previously used. We understand, from what we have since heard, that analyses so far made have shewn a great improvement; and we hope that during the prevalence of strong east winds, and during the season of ice and spring floods, the same good account will be heard from the action of the filter. We would, if time permitted, describe this filter and its action. It must suffice to say that it is a sand filter, all impurities being washed out of the sand every day by a peculiar arrangement, and that the water is subjected to a greater or less extent, at the will of the operator, to the action of alum and iron.

All which is respectfully submitted.

Signed, { WM. OLDRIGHT.
FRANCIS RAE.

SECOND REPORT ON KINGSTON ASYLUM BY A COMMITTEE OF THE PROVINCIAL BOARD OF HEALTH.

Interim Report.

To the Chairman and Members of the Provincial Board of Health:

Gentlemen,—Having received from the Chairman an intimation that Dr. O'Reilly, Inspector of Asylums, had, with the sanction of the Government, requested that I should accompany him to Kingston, in consequence of a recurrence of typhoid fever in the asylum, I proceeded to Kingston on the 19th of March (instant). We found that there had been nine cases of fever since the date of the report presented last summer, and that these had occurred within the last six weeks. There had also been within the past two months two bad cases of dysentery—one fatal—and four cases of erysipelas. Dr. Clark and a number of the patients had also suffered from diarrhœa.

The typhoid cases were, as a rule, mild. The first case was that of Dr. Clark's little two-year-old daughter, born in the asylum. Of the others all but three had come to the asylum since the date of the last epidemic of fever. It will be remembered that in the three previous outbreaks those attacked were new-comers; as on other occasions, too, the first cases occurred in February, and were followed by others in the two or three succeeding months.

By a reference to the recommendations of last year, it will be seen that, although several special ventilators were placed so as to ventilate drains, there were three rain-pipes which it was hoped could be utilized in this way, as they opened above the roof, and were intended as counter-vents only. We found, however, that, from their situation on the northern side of the building, in angles secluded from the sun, two of them were frozen solid, and the third one had its bore very much diminished. I recommended that steps should at once be taken to re-establish the current of fresh air through the drains. One of these pipes was a counter-vent to the soil-pipe in the central part of the building. I would recommend that this be hereafter served by a special ventilating pipe, run up from the point where the drain comes out through the wall of the building.

The other two rain pipes acted as counter-vents to two drains running, one under the east wing and one under the west wing. These drains it is supposed carry nothing but rain water; but they communicate with foul sewers and are masonry drains. We cannot be sure that they are tight, and they may pollute the soil under the building. This soil is covered by flag-stones, forming the floors of some of the corridors from which air is supplied to the wards; and in these floors, on the west side, there are numerous cracks and crevices. Both these drains should be done away with, some other means being taken to dispose of the rain water from these portions of the roof; it could either be led around the wings by a small, tight, glazed-tile drain, or allowed to discharge upon

the ground. The drain under the western wing was not discovered until after our report was made last year. The one under the eastern end we were loth to leave last year, but hoped that, as it was trapped and ventilated, it might be allowed to remain.

The want of knowledge as to the course and position of drains and cess-pools has caused much trouble in these investigations, and affords one more example of the necessity for some plan which will secure a record of all drains and alterations of drains—a point for which I have contended for some years. In the absence of such definite information it will be necessary this coming spring to dig an exploratory trench all around the outside walls, and going down to the foundation. When this is being done it will be well to remove all the soil between the site of the old cess-pool and the walls of the building, saturate the ground with a solution of mercurial bichloride, and fill in with fresh earth.

Inside the building there are certain additional points that require attention.

In last year's report a break-syphon (vent-tube) was recommended in the surgery ; it was thought, however, by the medical officers, that they could remedy the defect there, and obviate the necessity for this alteration, by constant attention, as they are so much in the surgery. It has been found that the trap is so frequently forced or syphoned that it is no barrier to sewer gas, and will not be until it is provided with a vent.

I found that the traps of some of the sinks in the dining-rooms connected with the various wards, (which I had not observed before,) were readily syphoned, and that the water could be sucked out of them by a stream of water flowing down the water-pipe common to them all. The sewer gas from the drains can, in this way, find ready access to the inside of the building. A three-inch iron pipe should be carried up alongside of the waste pipe and through the roof, and to it should be connected a break-syphon from each of these traps.

It will be remembered that the system of plumbing in the wards is rather peculiar. Neither bath, basins nor water-closets are trapped, but waste without traps into a common soil-pipe, one at each end of the building. From the bottom of the soil-pipe on the men's side a horizontal flue communicates with the smoke-stack of the boiler furnaces. The soil-pipe on this side has no outlet above the closets.

On the women's side the soil-pipe is connected above and below with a flue which receives no heat other than that received through its wall being in contact with the air of the wards.

When I visited the asylum last year, in company with Dr. Rae, it was believed and stated that there was always a strong downward draught through the various conveniences and down the soil-pipe. Since then it has been noticed that in some of the closets the down draught has sometimes been very feeble, and that on one occasion it was doubtful whether there was not a slight upward current.

Our only reason for not condemning last year this peculiar method of plumbing, was that there was supposed to be a very strong downward draught produced constantly and invariably by this artificial system of exhaustion. As subsequent observations have shown that this cannot be relied upon, I must strongly recommend that each closet, bath and set of basins be trapped, and the traps vented. This being done the soil-pipe on the men's side will, of course, be carried up through the roof ; and on the women's side it will be merely entered into the flue adjoining that with which it is now connected below. In this way the drains will be efficiently ventilated, and there will be no possibility of the passage of gases or fever-germs from the drains or soil-pipes into the wards.

The closets themselves smell badly from the incrustation on them of urinary deposit. I would recommend that, when the alterations are being made, the closets put in be of the same kind as the three recommended and put in last year, which have given complete satisfaction. There are also two closets and urinals in a bad condition, and constituting a nuisance, in the basement of the central part of the building. These should be replaced by two closets like those referred to, and the urinals could then be abolished. As the urinals now are they allow of the passage of gases into the building, besides being themselves a nuisance.

Complaints having been made of the laundry we visited it, and two or three boards of rotten, worn-out flooring having been raised, we found a hollow into which a quantity of suds had run through the flooring. There had thus been formed a rich

agricultural soil, but one not at all fit to be under the floor of a work-room. There should be laid in this room a cement floor, sloping towards the trapped sink, which will carry off the suds. The increase of air-space between floor and ceiling will be an additional gain, the floor being lower than the wooden one now in existence. This floor being worn out in many places there need be the less hesitation about the change. The soil above referred to must be disinfected with the mercuric bichloride and replaced by fresh earth before the cemented floor is laid. The drain which runs under the laundry will also need to be attended to; to this I will refer presently.

The water-closet here is a bad one and there is no ventilation to the soil-pipe, part of which is a long, horizontal stretch. A new closet, of the kind before described, should be put in a position such that the soil-pipe will rise perpendicularly from the drain, and be extended through the roof. The counter-vent to be secured by a four-inch pipe, running from the drain just outside the eastern wall.

Cement floors are also needed in the closets for the use of the inmates of the wards. The wooden floors have become filth-saturated, and although constant washing is resorted to, it is impossible to remove what is absorbed by the wood, and a disgusting odour is the result.

I visited ward No. 9, over the engine-house and paint-shop, and found it to be destitute of ventilation, except into the kitchen corridor when the door is opened.

The closet and urinal are foul-smelling; and the whole atmosphere of the ward very bad. As this part of the building is to be reconstructed, nothing more need be said regarding it at present.

I would again draw attention to the facts pointed out, and renew the recommendations made, in last years' report regarding the dairy. The dairy, for an establishment of over 500 people, scattered throughout the various buildings, is at present a small section of one of the ventilating corridors in the basement. How its situation may effect the health of the inmates, is pointed out in the report referred to.

We noticed a trickle of water, which is not constant, coming through the lowest basement wall, at the spot where the offensive trickle occurred last year. There is no offensive smell about it at present.

It would be very desirable to have the flags of the basement raised, as soon as the weather is sufficiently warm to open the windows and doors, and the soil beneath explored and examined. It is Dr. O'Reilly's intention to have this done. In the meantime, the soil can be disinfected by raising a flag here and there, and pouring in a solution of the bichloride of mercury. The walls and roof have already had this disinfectant applied in a lime-wash.

The ventilation and heating of the building are in a very unsatisfactory condition.

In last years' report it was recommended that, "the ventilating flues be made to discharge their contents above the roof." The recommendation was partially carried out by making additional holes in the dome for the outlet of foul air from the flues. To carry out a satisfactory system of ventilation a careful consideration of all the details, and of various suggestions made by Dr. O'Reilly and others will have to be made, in conjunction with Mr. Tully, Chief Architect of Public Works. I may add to what was said last year, that the foul air, of the wings more especially, has no sufficient outlet, and that in some of the dormitories, and even in some of the basement corridors, there are down draughts bringing the foul air back again. The air to the officers' quarters comes from the neighbourhood of the kitchen. Various make-shifts have been resorted to, such as the opening of outside doors, the closing of certain of the flues, etc., so as to try and remedy some of the defects.

The upper wards are at times rather cold, owing to the exigencies of this ventilation problem.

As there are certain alterations in the plumbing which do not brook delay, I have not thought it well to keep back this report for the consideration of this subject.

Another question which will require a similar careful consideration in concert with Mr. Tully, is that of the size and course of the sewers, and the substituting of tile for brick, in the one running under the laundry. A reference to the plan appended to last years' report, will make the following remarks more clearly understood :—

Originally there were two brick sewers running down to the lake; one on each side of the main building, and large enough to carry the sewage of a city. The one on the west side is the one in regard to which we are now more particularly concerned. When it was decided to take the water supply from the lake, it was found necessary to deflect this sewer from its course, and it was cut at a point about 360 feet from its head, and its contents turned into a one-foot barrel-drain, which runs in a south-easterly direction, passing under the laundry, and on till it reaches a low level, along which it runs easterly, with little or no fall, a distance of about 160 feet, emptying into the eastern, or as it may now be called, the main sewer, about forty feet from its mouth. I am informed by the Inspector of Works, at Kingston, that the contents of this lower 160 feet are almost stagnant, and I know from my own observations, that in looking up the mouth of the main sewer, there is a stagnant estuary extending back, it seems to me, for more than forty feet—the sewage being backed up by the water of the lake.

It will be seen from the above description, that we have at the head of a one foot drain, a five foot chamber 360 feet long, receiving the gases of decomposition arising from the sewage either lying in, or sticking to the walls of the lower 160 feet of the former (one foot) drain. This drain receives the sewage from both cottages, from Dr. Metcalf's house, from the womens side of the main building, from ward No. 9, and the hot suds from the laundry. These latter will aid rapid decomposition.

It can be readily understood that the long five-foot chamber above described must be full of very bad gas, ready to force its way under pressure or expansion, into the various connecting drains, or to be absorbed through the traps.

One thing is quite certain :—That whether or not any change is made in the course of this drain, the course of the upper 300 feet of it must remain as at present. The calibre of this portion should be reduced. This could easily be done by laying a tile drain with cement joints along the bottom of this great sewer. This latter would then be a dry, subterranean passage, which could be limed and ventilated through the two manholes, which are at present closed.

If the course of the lower part of the drain be left as at present, then the portion of it under the laundry should be replaced by tile, bedded in cement.

If the course of the drain be changed, then the laundry tubs, closet, etc., should waste at the side from which the drain runs, and the portion under the laundry might be removed. In either case, if the brick barrel-drain be found to have leaked and discharged sewage, the surrounding earth should be removed, solution of bichloride of mercury be used, and fresh earth filled in.

It was stated in the report presented by Dr. Rae and myself last year, that the old masonry drains should be replaced by glazed-tile drains—gradually, if it could not be all done at once.

The changes desirable in these sewers necessitate the consideration of some engineering questions, and will form the subject of a conference with Mr. Tully.

At the mouth of the main sewer there is a heap of solid sewage, which should be dredged away.

Analyses are again being made of the water. I have, as yet, nothing to add to our report of last year in this regard, except to say that with the exception of a circular patch of about fifteen feet around the mouth of the sewer, the whole bay is covered with a solid sheet of ice.

Reserving any further remarks as to the influence on the health of the institution of the facts stated, until the points still to be ascertained are reported upon. I will here summarize the points that we know must be attended to, placing first, those which require more immediate attention :

Summary and Recapitulation.

A.—Matters Requiring Immediate Attention.

1. A breathing-pipe, three-inch iron pipe, to each line of sinks, from the basement up through the roof. A break-syphon from each sink-trap to be connected to this breathing-pipe.

2. A short breathing-pipe from the trap in the surgery, of lead or iron.

3. Traps on each closet, bath and set of basins in the wings, with vent-tubes, and break-syphons. The soil-pipes to be continued upwards, as described in the report.

4. Fourteen new closets of the kind introduced into the officers' quarters last year, ten for the two wings, one for the laundry, one for the officers, in the basement, one for the keepers, in the basement, one for No. 9 Ward, when attended to, and wherever the new ward may be.

5. The order for the cement for laundry floor, to be given so that preparations can be made. The sewer question can be determined in the meantime.

6. Soil-pipe to be carried through the roof in the laundry, and counter-vent pipe outside.

7. Cement floors for closets in the wings.

B.—To be Attended to After Frost is Gone.

8. Vent-pipe from drain outside officers soil-pipe, before winter comes again.
9. New dairy outside.
10. Tile-drain to replace five-foot brick drain on west side.
11. Drains under wings to be done away with.
12. Exploratory trench outside of building.
13. Examination of soil of basement.
14. Removal of polluted earth, if any found, and disinfection.
15. Government has already decided on alterations, which will reconstruct Ward No. 9.
16. Ventilation and heating to be overhauled.

C.—The Following Precautions Have been Taken:

1. Soil-pipes have been, and are being, flushed with the bichloride solution.
2. Also all the drains about the building.
3. Excreta similarly disinfected, removed in closed vessels and burned in the boiler furnaces.
4. Vaults disinfected as described.
5. Openings made in frozen rain-pipes, so as to let air into the drains.

All which is respectfully submitted,

WM. OLDRIGHT.

APPENDIX VII.

REPORT OF THE COMMITTEE INVESTIGATING THE ESTABLISHMENT OF A "VACCINE FARM."

To the Provincial Board of Health :

GENTLEMEN,—The Committee appointed to investigate the advisability of having a vaccine establishment for the Province of Ontario, beg leave to report the following statements and observations, relative to such an arrangement for the supply of vaccine lymph to medical officers or clerks of all the Local Boards of Health now or hereafter to be established in Ontario.

In spite of the efforts of numerous opponents of vaccination in late years so persistently made, particularly in England, for the discouragement of the practice, no unprejudiced person, with any acquaintance with the literature of the subject, can reasonably doubt the efficacy and value of this precautionary measure ; and so impressed with the importance of it, as mitigating if not preventing small-pox, have been our legislators that in chapter 191 of the Public Health Act will be found the following clauses :—

Trustees of hospitals to keep vaccine matter for the vaccination of the poor, and for the use of the Indians ; no warrant for the payment of money to issue to any hospital, unless it has a sufficient quantity of vaccine matter on hand ; annual statements to be laid before the Legislature respecting vaccination ; certain cities to employ medical men to vaccinate the citizens, and remuneration to depend on the success of the practice ; such city to appoint a convenient place in each ward for the purpose ; parents bound to take children to be vaccinated, and exhibit them to the medical man or vaccinator on the eighth day ; certificate of successful vaccination to be given by him ; or if a child be found to be in an unfit state for vaccination, a certificate to that effect is to be given, and to continue in force for two months, when a renewal, if necessary, is to be given, and these to be continued each succeeding period of two months until such child has been successfully vaccinated, when a certificate is to be given under the form of Schedule A of the Act. For noncompliance with all these provisions certain penalties are ordained.

The following extracts, taken from the twelfth annual report of the Local Government Board, England, show the laws of vaccination and their modes of enforcement in the countries named :—

AUSTRIAN EMPIRE.

(*a*) *Austria.*—In Austria vaccination is not legally obligatory on the people generally, but is "carried out as far as practical." On the following classes of persons, however, the operation is compulsory :—

1. Wards of State Provident Institutions ; 2. Children in orphan homes ; 3. All persons obtaining scholarships ; 4. All persons entering charitable institutions ; 5. All persons to whom free education is granted ; 6. Candidates for the military educational institute.

There is no special rule as to the vaccination of persons entering the army and navy, but all such persons are medically examined prior to their admission, and where it is doubtful whether the candidate has previously been successfully vaccinated, the operation is performed.

The law regulating the performance of vaccination in Austria was passed in 1836, and has only been altered so far as was necessary to make it compatible with the present system of government.

(*b*) *Hungary.*—In Hungary vaccination is performed under a law passed in the year 1876. By this law parents and guardians, and all persons having charge of children, are bound to have them vaccinated within a year of their birth, unless they have had the small-pox. Only vaccinated children are admitted to the military and civil educational institutes.

Belgium.

Vaccination is not compulsory in Belgium. The only legislative enactment of a general character on the subject is a decree of 1818, prescribing measures for extending the system of inoculation of vaccine matter. It is very limited in its action, applying only to certain classes of citizens. Moreover, it does not impose the duty of carrying out its provisions upon the Government, but upon the provincial and communal administrations and charitable institutions. Each province has a special regulation on the subject of vaccination; and the communal administrations can, and in many cases have, established systems for promoting the operation. The question of making vaccination compulsory has of late been frequently discussed in Belgium, and the Academy of Medicine, as well as the majority of medical men, advocate legislation in this sense; but up to the present time (June, 1881) the Government have taken no steps in the matter.

Denmark.

In Denmark examinations and quarantine are enforced to prevent small-pox epidemics, and vaccination appears to have been obligatory since 1810. Re-vaccination is generally not enjoined, but an ordinance of 1836 requires the re-vaccination of all recruits for the army.

France.

In France vaccination is not at present compulsory on the general population, but strict regulations exist regarding its performance on members of the army and navy. The operation is frequently performed by mid-wives, and the arrangements are generally very defective.

Army.—By an order of 30th June, 1848, all recruits, whose vaccination marks were doubtful or wanting, had to be vaccinated on joining the army.

This order having been followed by a diminution of small-pox in the army, a further and more stringent order was issued on the 31st December, 1857, directing that all recruits should be vaccinated on joining their regiments, whether they had been previously vaccinated or not. By this order also, re-vaccination was made compulsory throughout the army.

In 1876 it was found that vaccination and re-vaccination were not sufficiently carried out under the above orders; further regulations were therefore issued on the 1st March, 1876, and the 16th June, 1877, impressing upon the military authorities the necessity of securing the early performance of the operation.

Navy.—By an order of 30th November, 1869, every man is required to be vaccinated within eight days of his joining the navy, unless he bears undoubted marks of small-pox.

This order has been followed by good results, small-pox being now rare in ships at sea.

German Empire.

In the German Empire, prior to 1875, different modes of enforcing vaccination existed, and the stringency of the vaccination laws varied in different States:—

(*a*) *Baden.*—In the Grand Duchy of Baden vaccination has been compulsory since 1815.

(*b*) *Bavaria.*—In the kingdom of Bavaria it was introduced eight years earlier by a royal ordinance of 26th August, 1807. Re-vaccination was not compulsory on the general population prior to 1875, but under the police regulations for Bavaria for 1871, re-vaccination could be ordered at any time by the proper authorities, as a precaution against the outbreak of small-pox.

(*c*) *Hesse-Darmstadt.*—In the Grand Duchy of Hesse the practice was also introduced in 1807, but appears not to have been made compulsory until some little time after. Under the law, as it existed in Hesse before 1875, children were usually subjected to vaccination at a much earlier age than they are now, and there were scarcely any refusals to comply with the law.

(*d*) *Saxe-Cobourg-Gotha.*—Compulsory vaccination in the Dutchies of Saxe-Cobourg and Gotha dates from the year 1829, and to a certain extent from an earlier period.

(*e*) *Wurtemberg.*—Compulsory vaccination was introduced into the kingdom of Wurtemberg by a law passed on the 25th of June, 1818.

In 1875, however, all the laws for the enforcement of vaccination existing in the different German states were superseded by the Imperial Vaccination Law passed on the 8th of April, 1874, which applies to the whole of the German Empire. Under this law every child must be vaccinated before the end of the calendar year next following the year in which he or she was born, unless it be proved by medical certificate that the said child has already had the small-pox.

Every pupil of a public or private school has to be vaccinated within the year next following that in which the said pupil has completed his or her 12th year, unless it be provided by a medical certificate that he or she has had the small-pox or been successfully vaccinated within the last five years. If the operation is illegally left undone, the court may fix a time for its performance.

As regards the army and navy, every man on entering these services is obliged to be re-vaccinated, even if he already bear marks of successful primary vaccination.

Holland.

In Holland the basis of the existing law relating to vaccination is contained in an Act passed on the 4th of December, 1872. By section 17 of that Act it is provided that "Schoolmasters, schoolmistresses or pupils, who are not in possession of a declaration signed by a physician setting forth that they have been successfully vaccinated, or vaccinated more than once, or have had small-pox naturally, shall not be admitted into schools.

Italy.

Various laws as to vaccination exist in the different States of Italy, but the operation does not appear to be anywhere directly obligatory. Children, however, are not admitted to the schools and public institutions unless they have been vaccinated or have had the small-pox. There are no general laws or regulations concerning re-vaccination.

In the Italian navy since 1865, the men are vaccinated immediately on their enrolment, whether or not they have previously had the small-pox or been vaccinated. The regulations in the army are the same as those observed in the navy.

Montenegro.

From a despatch dated 11th of June, 1881, from the Montenegrin Minister for Foreign Affairs, it appears that at that time there was no written law regulating vaccination in Montenegro. It was the practice, however, for the Government to send a doctor through the country, or to the chief place of each district, and the people were obliged to bring their children who had not been vaccinated. The Government have recognized the insufficiency of this method, and have given directions for the preparation of a general regulation relating to vaccination.

Norway.

In Norway an ordinance of the 3rd April, 1810 (sec. 7), provides that children shall not be received into schools, except upon production of evidence of their vaccination or of their having had small-pox. The same rule applies to apprentices, to corporations, and to persons received as pensioners in the public institutions (sec. 8). Soldiers are vaccinated immediately on joining the service, unless they produce the "ordained" certificate (sec. 9), or show unmistakable marks of having had small-pox. Candidates

for confirmation who have not been vaccinated or had small-pox, are admonished by the clergyman to have the operation at once performed, and since the 1st of January, 1811, clergymen have been forbidden to marry any couple, unless they prove that they have either been vaccinated or had small-pox (sec. 10).

Sweden.

In Sweden the Act in force is dated 28th September, 1853, and requires (sec. 1*a*) the vaccination of all children before they attain the age of two years, unless they already have had small-pox. No person can be admitted into any public school, college, or educational establishment, unless he prove vaccination, small-pox, or insusceptibility (sec. 2). No child can be delivered up from any orphan-house for education, except on production of a certificate of vaccination or small-pox (sec. 3). The clergy are directed to encourage vaccination as much as possible (sec. 13). Penalties are provided for persons who, not being vaccinated, are seized with small-pox (sec. 23*b*, page 33).

Roumania.

As regards Roumania, up to the year 1874, primary vaccination does not appear to have been directly compulsory, though the performance of the operation was indirectly attained by requiring all boys and girls attending schools to give proof of their having been vaccinated. In 1874 a law was passed under which vaccination was made obligatory upon the entire population, and re-vaccination upon children of seven years and upward.

Servia.

In Servia the present law regulating the performance of vaccination came into operation in May, 1881. Every new-born child is now required to be vaccinated before it attains the age of twelve months (sec. 20, 6*a*); and every child must be re-vaccinated on completing the course of the elementary schools (*Ibid*). Every recruit must be vaccinated on joining the army, whether he shall have been previously vaccinated or not. (*Ibid*). Where parents persistently neglect or refuse to have their child vaccinated, a heavy fine (4*b*) is imposed if the child subsequently takes small-pox and the disease spreads.

When small-pox breaks out in any Commune, extraordinary attendances of the public vaccinator are at once arranged, and all the inhabitants of the Commune can be re-vaccinated, whether they have been previously re-vaccinated or not.

Provisions relating to vaccination similar in theory to the law of 1881 existed before that year, but re-vaccination was not compulsory, and there was no machinery for enforcing the law.

Spain.

In Spain no general enactment relating to vaccination existed before the decree of 30th December, 1873, though the Spanish Government have favoured the performance of vaccination since its discovery. The decree referred to does not make the operation obligatory upon the population generally, but only upon individuals who are immediately under the control of the civil authorities in work-houses, colleges, penal establishments, and hospitals, and upon men in the army and navy. The decree, however, directs provincial and municipal authorities to exert what power they may possess in order to oblige all individuals immediately dependent on them to be vaccinated or re-vaccinated, and to propagate the notion of the convenience of vaccination among private individuals.

Switzerland.

The vaccination laws of Switzerland vary in the different Cantons. The operation is compulsory in all except Bâle-ville, Uri, Glarus, and Geneva. In Glarus the compulsory clauses were repealed in 1876.

Re-vaccination is generally compulsory in the Cantons of Fribourg and the Grisons. In Zurich, Zug, Argavie, and Neuchâtel re-vaccination is compulsory only in infected houses, and during an epidemic. In the Saleure Canton the general performance of re-vaccination can be ordered during an epidemic by the sanitary authority. In several other Cantons the operation is merely encouraged, and in some no definite regulations on the subject exist.

In 1871 the re-vaccination of all recruits was ordered, and the order was confirmed by a Federal decree in 1873. In 1881 an attempt was make to introduce a general vaccination law which should be applicable to the whole of the Swiss Confederation. The Bill passed the Federal Chambers, but on reference to the popular vote it was thrown out by a large majority. The old arrangement by which each Canton controls its own vaccination laws remains therefore in force. Probably the decision of the people against the Federal law proceeded from the objection of the Cantons to transfer their own rights to the Federal Government, rather than to any direct objection to compulsory vaccination. Bâle-ville appears to be the only Canton which has recently repealed its compulsory vaccination law in consequence of the anti-vaccination movement.

Turkey.

No law exists in Turkey for the regulation of vaccination, but there are certain establishments at which all persons desiring to be vaccinated can have the operation performed. In addition, vaccinators are occasionally sent to the Bosphorus villages to vaccinate all who desire it.

We have no information as to the vaccination laws in Portugal or Russia.

Comparative Small-pox Death-rate in London, England.

Vide Eleventh Annual Report (supplement) Local Government Board, 1881–82.

Now, the population of London, under twenty, was 1,398,048 in 1871, and this is computed to have increased, during the past ten years, to some 1,640,000. What proportion of these are vaccinated and what unvaccinated? The answer to this question may be derived from the relative proportion of the two classes found in 1863, upon an examination of 53,185 children in various national, charitable and parochial schools and work-houses of London. There were then 6.4 per cent. of children who had no vaccination scar, or where vaccination scars were doubtful; and the remaining 93.6 per cent. of children had scars of successful vaccination upon their arms. With the machinery of vaccination officers, commencing in 1867, and regularly at work since 1871, it is not to be supposed that this percentage of unvaccinated has become greater, or the percentage of vaccinated less. Dividing the number of persons under the age of twenty, now living in London, in accordance with these percentages, we obtain 1,535,000 as being the number of the vaccinated class, and 105,000 as the number of the unvaccinated class.

Applying the mortality from small-pox among persons under twenty years of age, during the past fifty-two weeks, to these populations, we obtain as the *rate of their small-pox mortality* for the twelve-month: among the vaccinated class, sixty-one per million; among the unvaccinated class, 4,520 per million. These rates are for the inhabitants of London under twenty years of age, and they again are not absolute rates, but are rates that admit comparison one with the other, and as such they are altogether to be trusted.

Reckoning the two first of these figures as rates on the number of London children now living, vaccinated and unvaccinated respectively, we obtain, *as the rate of their death from small-pox* during the past fifty-two weeks, forty and one-half per million among the vaccinated class, and 5,950 per million among the not-vaccinated class. These rates are for London children under five; and I repeat once more, that they are not absolute rates (which would be higher for both classes), but they are rates which admit of being compared the one with the other, showing the relative mortality of the two classes, and as

such they may be taken as correct. The foregoing may be summed up in the following table:—

Death-rate of People of Subjoined Ages.	Per Million of each age of the Vaccinated Class.	Per Million of each age of the Unvaccinated Class.
All ages	90	3,350
Under Twenty Years	61	4,520
Under Five Years	40½	5,950

Dr. Norman Cheevers reports the total vaccinations in India during 1881 as 4,414,342, with a percentage of success to primary operation of from eighty to ninety-eight (twenty-three per cent.), thus exhibiting the Indian sanitary system as in a very advanced state. Surgeon-major Pringle, another Indian officer, remarks: "After twenty years of close experience of vaccination, in which I have devoted my whole attention to it, I must honestly say I have never yet met with an epidemic of small-pox where systematic vaccination from arm to arm was carried on."

From the above illustrations of the views almost universally entertained then, of the prophylactic powers of genuine vaccine-lymph, it is sufficiently evident that it is recognized as *the precaution* of all others to be taken against this loathsome disease. Without further selections from writers on this subject, which, if time permitted, might in great abundance be given, we turn to a brief notice of the objections that have been by many persistently urged against the practice, on the ground of inefficiency, as, also, of directly injurious effects, such as permanent derangements of nutrition, and of transmission of hereditary or acquired diseases, such as scrofula, phthisis and venereal maladies.

The possibility of the actual transmission of a disease through vaccination has, up to the present time, only been demonstrated in but a single instance, and that is syphilis. On the subject Curchman says: "Could the opponents of vaccination show that this occurs with any degree of frequency, or is with difficulty prevented, vaccination would thereby receive a severe blow. But here, fortunately, lies the weak point in our opponents' deductions. In the first place, those cases where the actual inoculation of syphilis has been verified are so exceedingly rare that, the objections based upon them, are consequently materially weakened. The force of those objections is still more impaired by means of the evidence almost always present, that the unfortunate result was due to actual carelessness, or to an oversight easy to be avoided. Nearly all of the unhappy occurrences of this sort are not the fault of vaccination, but of its improper performance. Our experience regarding the inoculation of syphilis admonishes us, therefore, not to throw aside from mere timidity, one of our most valuable safeguards from small-pox, but to endeavour to ascertain how we may avoid this undeniably serious accident. The most radical means to avoid it is to vaccinate with lymph directly from the heifer."

There of course is danger in using for vaccination lymph of the origin of which nothing is known; only such should be used as has directly been obtained by a physician from healthy children, the antecedents of whose parents are well known; and it would be well to take the precaution of carefully examining the entire body of children from whom lymph is taken, where a history of the parents is only imperfectly known.

Viennois was of the opinion that the transmission of the disease might certainly be avoided, even in vaccinating from syphilitic children, if the clear lymph alone were used with no admixture of blood—the lymph according to his experience, never being the vehicle of syphilitic poison, which he considers to be invariably contained in the blood.

Subsequent experiments, however, have disproved these views. It is, however, generally admitted to be a fact, that bloody, or cloudy purulent lymph is more dangerous than that which is perfectly clear.

Attention has also been called to a fact that not in all, but in a very small number of the cases vaccinated from syphilitic children is the disease transmitted. This is satisfactorily proven in the report by a Committee appointed to investigate Dr. Cory's experiments in vaccinating himself, and from only one of the four vaccinations did the disease follow from syphilitic children.

The following extracts are taken from the report of the Committee above referred to :—

"Dr. Robert Cory, the subject of this inquiry, aged now thirty-eight years, was vaccinated in infancy, re-vaccinated the first time, he states, twenty-two years ago, and a second time in Germany in 1871, or 1872. There are visible two large, flat, apparently primary vaccination scars, one on each arm, and in addition, on the right arm, three small, apparently re-vaccination scars. On four occasions since, he has vaccinated himself, or caused himself to be vaccinated, from obviously syphilitic infants, being, on each occasion, in his ordinary condition of health. He had never previously suffered from syphilis.

1st Experiment—This was performed in the year 1877, or 1878.

From one of the vesicles Dr. Cory vaccinated himself in one place just above the left wrist. He most carefully avoided, in taking the lymph, so puncturing the vesicle as to obtain lymph containing an admixture with blood; and, in fact, had the lymph contained any blood, he would not have used it. No syphilitic trouble followed.

2nd Experiment.—This was performed on November 5th., 1879.

The vaccinifer was a male infant, aged eighty-five days, who had been under mercurial treatment for syphilis at St. Thomas's Hospital for about four days when used by Dr. Cory for the purpose of his experiment. At that time there were present on the infant manifestations of active syphilis.

From this infant Dr. Cory vaccinated himself, taking the lymph very carefully, so as to avoid any admixture of blood. No syphilitic trouble followed.

3rd Experiment.—This was performed on May 11th., 1881.

The vaccinifer was a male infant, aged four and one-half months, who was attending the out-patient department of St. Thomas's Hospital for syphilis, being under the care of Mr. Anderson. He was, at the time of his vaccination, under mercurial treatment. The following notes of the case were given to Dr. Cory by Mr. Anderson, on June 22nd. :

"Healthy at birth ; at the age of six weeks attended the hospital for hydrocelé ; at that time there were no signs of syphilis. At the age of three months there was observed a roseolar eruption, chiefly about the nates; there were mucous tubercles about the angles of the mouth, snuffling, emaciation, and a cachetic aspect. The child improved rapidly under the mercurial treatment. On June 7th., when he attended again for a spasmodic affection of the muscles of the left knee ; he was in a good condition, and free from signs of syphilis ; he was then still taking grey powder."

Again Dr. Cory took the lymph, with the utmost care to avoid admixture with blood, and with it vaccinated himself in two places, at the upper part of the left fore-arm. No syphilitic trouble followed.

4th Experiment.—This was performed on July 6th., 1881.

The vaccinifer was a female infant aged eighty-four days. The history of the child was, that soon after birth, she suffered from thrush, from which she recovered completely. Ten days after birth she began to have snuffles. When about four weeks old an eruption appeared upon the arms, and it was still present when the lymph was taken for Dr. Cory's experiment. In addition, there was, at that time, a sore upon the right buttock, and a sore, also, in the left nostril.

At the time Dr. Cory used this vaccinifer, there were fine vesicles on the arm, and they are described as normal in appearance, and not inflamed. The immediate neighbourhood of the vesicles was free from eruption.

On the twenty-first day, viz. on July 26th., Dr. Cory observed that the lower of the three places, and the outer one of the upper pair had become red, and had each formed a small, red papule. Dr. Humphrey, and Mr. Hutchinson both considered the

spots to be syphilitic. On the 14th., the lower place was a little inflamed. On the 17th., almost all tenderness on pressure over the wound had disappeared, but for the first time a gland was left in the axilla, not painful on pressure. There was great axillary trouble during the day of the 18th. On the 20th the pain in the axilla was severe, even when resting. Two glands in the axilla were enlarged, and one of them was very painful when pressed. On the 31st., felt better in health, but for the first time noticed roseolar eruption on the forehead and temples, back of neck, and below the ears, and also on the lower part of the abdomen. This eruption lasted four days. He now placed himself fully under anti-syphilitic treatment.

1. It is conclusively proved by Dr. Cory's experiments, that it is possible for syphilis to be communicated in vaccination from a vaccine vesicle on a syphilitic person, notwithstanding that the operation be performed with the utmost care, to avoid the admixture with blood.

2. It is to be remarked that the infants from whom Dr. Cory took lymph for his personal vaccination were, in all cases but one, not suffering from hereditary syphilis in a *latent* form, but were infants in whom *active* symptoms were unmistakably present, as shown by cutaneous eruption, snuffles, mucous tubercles, and ulcerations.

3. Moreover, out of the four children thus used, only one was proved to have been capable of imparting syphilis by the lymph taken from its vaccine vesicle.

4. Dr. Cory's case is in conformity with general experience in the following respects, among others: namely: That when syphilis is communicated by inoculation, the first appearance of the disease is at the seat of inoculation, the taint of the blood being in all cases preceded by a conspicuous, peculiar and persistent manifestation of disease at the seat of inoculation.

5. The infants from whom Dr. Cory took lymph for his experiments on his own person, were in such a condition of obvious syphilitic disease as would certainly have precluded their use as vaccinifers by even an inconsiderate and reckless vaccinator. Indeed they were selected by Dr. Cory for his self-vaccination because they were unquestionable syphilitic cases. It is a rule of practice in the profession not to use in vaccination lymph taken from a child in whom there is any suspicion whatever of syphilitic taint, or indeed in whom there is any skin disease, although of a character known to be harmless; and the observance of this professional rule is strictly enjoined by the Local Government Board in its instructions to public vaccinators throughout the country.

From the reports of Mr. Shirley Murphy (supplement to 12th Annual Report, page 23, of Local Government Board), it would appear that there is much less difference than has heretofore been supposed between calf lymph and humanized lymph. In the selection of lymph from the calf, it is of course important that there should be satisfactory evidence of the animal being perfectly healthy as in obtaining human virus. In the case of delicate and feeble children humanized lymph may be considered preferable, on account of the severity of the local effects frequently resulting from the bovine lymph; but from the observations of the vaccinators at various stations in London, there has seemed little to choose between the one and the other lymph either in respect of success, or in respect of local and constitutional effect produced; and, further, the influence of storing on the activity of the lymph, at one time believed to be more rapid and more pronounced in the case of the calf product, is now appearing to be not very different in the case of humanized lymph and calf lymph.

It is apparent that in order to dissipate from the public mind the fear of ulterior consequences resulting from the use of lymph of unknown origin, it is desirable that there should be provided an institution for the supply of virus, the source of which for purity is unquestionable. This implies the construction of stables for the calves selected by an expert veterinary surgeon, with a floor space for each stall adequate for thorough ventilation; floor to be made of concrete with a fall to a channel opening to a trapped drain; feeding-trough of iron, heated with hot-water pipes; an isolation stable for the removal of any calf it may be judged desirable to separate. For diagrams and full particulars of an Animal Vaccine Establishment in Kensington, *vide* 12th Annual Report of Local Government Board (Eng.), page 34, as follows:—

The ground floor of the house 95, Lamb's Conduct Street was converted into an entrance hall, giving access to a waiting-room measuring 32 x 29 feet. The waiting-room opens into another room measuring 25 x 30 feet, and divided into two parts by a screen, on either side of which the vaccination of children and calves is performed. On the side of the operating-room further from the waiting-room is a passage leading to a furnace-room, a store-room, and three stables for calves. Each stable measures on an average $15\frac{1}{2}$ x $9\frac{1}{2}$ feet, and is fitted with four stalls; each calf, therefore, has a floor space of 36.7 feet.

A calf is vaccinated on Saturday with lymph stored in tubes. This calf supplies lymph on the following Thursday for—

a. The direct vaccination of children at the station;
b. The supply of lymph to the National Vaccine Establishment;
c. The direct vaccination of another calf;
d. The vaccination of another calf on the following Saturday.

The calf vaccinated on Thursday provides lymph on Tuesday for—

a. The direct vaccination of children at the station;
b. The supply of lymph to the National Vaccine Establishment.

Your Committee having thus endeavoured in this report to point out, 1st—The acknowledgment of the vital importance of vaccination by the Legislature of Ontario, as evidenced by their very comprehensive chapter on this subject in the Revised Statutes of Ontario, Cap. 191; 2nd—The laws pertaining to this subject in European countries, as also in other parts of the world; 3rd—Untenable nature of objections that have been urged on various grounds to vaccination, when due care is exhibited in the selection of a vaccinifer; 4th—Dr. Cory's crucial test in the matter of transmission of syphilis, only succeeding by setting aside the precautions in such a manner that no medical man is likely by accident or carelessness to imitate, there remains only the question whether the demand from the Local Boards and physicians will be sufficient to cover the expenses of the undertaking. These expenses for a Provincial vaccine establishment would be much less than for any private company undertaking it.

Circulars from this Board have been recently sent to every Local Board and Municipal Council on the subject of the necessity for increased attention to vaccination, in which reference is also made to the limitation of the spread of small-pox in the recent Hungerford epidemic by the almost universal performance of it. When the wolf is at the door there are no qualms of conscience—no questions of propriety or visionary difficulties allowed to interfere with the employment of any measure calculated to insure safety; but no very long time after the passing away of the danger indifference succeeds, particularly if there is a question of immediate cost.

There can be little doubt that the furnishing lymph of unquestioned purity would go a great way in overcoming present objections to the universal practice of vaccination in infancy, and re-vaccination in adult age. Whether the undertaking—before we have reason to believe that the people are generally awakened to full consciousness of paramount necessity—is advisable, your Committee leave for the decision to the Board.

In considering the question as to whether the Board should ask the Government to establish a Vaccine Farm, taking as a basis the facts contained in the foregoing Report, we have, it would seem, two points to consider:—

1st. Whether the exigencies of the case require that we recommend its establishment, irrespective of the question of whether it could be carried on without loss.

2nd. Whether any scheme can be suggested by which the Government could, with very slight trouble and expense, arrange for the cultivation of vaccine lymph to be carried on at the Agricultural College, Guelph.

In connection with the first point, it can hardly be said that the exigencies of the recent small-pox epidemic in Hungerford have shown the establishment of a Vaccine Farm a necessity, since fresh vaccine of a first-class quality (as proved by its prophylactic properties) was obtained in sufficient quantities at a moderate cost from the United States. This fact, however, does not meet the difficulty which was proposed in the

resolution, to be dealt with by the Board. The fact remains that a large percentage of the population growing up in the Province is unvaccinated; and the resolution assumes, as shown both by experience and the petitions received, that this is in large part due to a mistrust existing in the mind of the public regarding the purity of the virus which is commonly employed.

It may fairly be said, however, that in Ontario in addition to this mistrust, apathy and a general dislike to being made sick for a few days, amongst the better classes; and carelessness and an objection to the small expense, amongst the poorer classes, are the causes for not having the practice regularly carried out.

It is probably quite true, however, that with the formation of Local Boards, which in many instances are inclined to thoroughly carry out public health laws, Municipal Councils will find out that they now have machinery for enforcing cap. 191, R. S. O.; and that they will be glad to avail themselves of the advice and authority of the Provincial Board of Health, given by circulars, etc., and by the still stronger argument of the existence of a Vaccine Farm, where, as the public will understand, pure-blooded animals selected by the veterinarian attached to the Agricultural College, are those from which the lymph, unpolluted by passing through any human system, is obtained. We thus come to the discussion of the second question of whether any scheme can be suggested by which the Government can, with but slight trouble and expense, arrange for the cultivation of lymph at the Agricultural College, Guelph.

The following points may be considered in this connection:—

1. The amount of the demand for vaccine; 2. The steadiness of the demand; 3. The number of animals which will require to be kept; 4. The conveniences there are for keeping them; 5. The labour of carrying on the work of—

(*a*) Inspecting and buying new animals;
(*b*) Of carefully vaccinating them;
(*c*) The value of each animal in points obtainable for issue, compared with her cost;
(*d*) Whether the cost of preparation can be covered by paying sales.

1st. *Amount of the Demand.*—Assuming that 40,000 children are born in Ontario annually, and that fifty per cent. will be vaccinated, we have 20,000 points required. Next, assuming that there are 200,000 school children annually, and that for the next five years ten per cent. of these will have to be vaccinated, we would have some 20,000 more. Calculated in terms of the number a medical man is likely to vaccinate annually, we would have each of the 2,000 medical men vaccinating twenty each, which is probably not far astray. This amount, assuming that it was supplied regularly, would mean some 4,000 points each month.

2nd. *Regularity, or Steadiness of the Demand.*—This is one of the most difficult points to deal with. While it is doubtless true that vaccine virus, if taken with care and carefully preserved, will remain active for several weeks in the summer; and while it is true that the vaccinated are probably less liable to take cold at this season, yet, in practice, it is found that the profession, owing to the difficulty of obtaining fresh virus at this season, do but little vaccinating.

Further, small-pox outbreaks create a sudden demand, which might require considerable facilities for supplying it.

3rd. *The Number of Animals Required to be Kept.*—As already noticed, this number will be wholly regulated by the supply. Taking the basis already given, and assuming that each animal will supply 500 points, and that half this number would be rendered useless, requiring to be re-dipped through being kept too long, we would require four cows to supply 1,000 points, or 160 to supply 40,000. In other words, some three or four cows would probably require to be kept constantly.

4th. *The Conveniences for Keeping them.*—As will readily be seen, the keeping of three or four cows during the year, at an institution such as the Agricultural College, with large stables wherein many first-class cattle are kept, would be no inconvenience and almost no extra work for the stable-men. The expenses attendant upon their keep would, it is readily seen, be for such an institution a matter of but little significance;

and, when compared with the impetus given to general vaccination, would be an expenditure which the country and Government would, we are sure, be only too ready to lend their countenance and support to.

5th. *The Labour of Carrying on the Work.*—The chief points to be considered under this head are :—

(*a*) *The Inspecting and Buying of the Animals to be Vaccinated.*—The facts brought out in a previous portion of this report made it abundantly plain that the animals, from which supplies are to be obtained, should be carefully selected by an experienced veterinarian. Such a desideratum would be supplied should the services of the veterinary surgeon, Mr. Fred. Grenside, of the Agricultural College be obtained. Should his services be employed for this work, it is plain that he would have to undertake the business of purchasing the animals. This he has special facilities for doing, since, living in Guelph, convenient to one of the best cattle markets in the Province, he would doubtless be able to purchase the number of animals necessary for carrying on the work. A point to be considered, and which may be referred to here, is the value of an animal after it has been vaccinated. The effects of vaccinating sheep or cattle with *charbon virus*, carried on to the extent of thousands of animals annually in France, has not, as far as we are aware, ever been held to, in any degree, depreciate the value of the meat of such animals ; and, as a matter of scientific interest, we think that nowhere has it ever been held that the inoculation of any animal, with any specific disease, has in any degree caused any deleterious effects to be noticed after recovery from such disease. Indeed, we think it absurd to suppose that the character of either a human or animal system, is in any way deteriorated by vaccination any more than it is after recovery from scarlatina, measles, or any similar disease. However, inasmuch as there might be some popular prejudice against animals used for vaccine purposes, it would seem highly desirable that they be kept on the college farm, until fattened and in condition for sending off to markets at a distance, where the fact of their having been vaccinated being unknown, they would sell for their full value. This we deem a matter of very considerable importance from the economic standpoint, since, assuming a loss through popular prejudice in the local market of $10 on each animal, the loss saved on 160 animals annually would be $1,600.

(*b*) *The Careful Vaccination of the Animals.*—This is simply a matter of detail and experience, to be gained only by practice and by following the now well-recognized methods. Cleanliness, pure lymph, diet, etc., would all require careful attention, while the taking of the lymph from the mature vesicle would have to be performed under the strict supervision of an experienced man. The storage of the prepared lymph, its desiccation and packing, would all be points to be carefully performed, since the success of the lymph, when placed in the hands of the physician or public vaccinator, is much more dependant upon the care with which this is carried out than upon any other consideration. For this work, and the commercial handling of the prepared vaccine, the services of two persons would probably be constantly required.

(*c*) *The value of each Animal in Lymph.*—Assuming that 250 points are sold from each animal, and that 1,000 points are sold weekly, there would be for a weekly income (at ten cents per point) $100 of revenue. Now this, it will be seen, is a very moderate amount from which to pay the help, the expenses of material, etc., etc. It would then seem apparent that should it be undertaken by any person or persons with a view to carrying out the wishes of the Government and this Board toward the end of supplying a reliable virus, it would be necessary to the success of the undertaking that the Government should extend the use of a stable, and supply the keep of the cows, until such time as the demand for virus might enable a company to be formed on what might be hoped ultimately to prove a paying basis.

(*d*) The question of whether vaccine virus can be supplied to the public on a paying basis, at a price less than that given above, is not one which hardly admits of discussion. All the facts go to show that it cannot, and I suppose that there cannot really be any object in wishing to sell it at a lower price.

In summing up the various points, it would seem to your Committee that the following conclusions may be accepted :—

1. That a large and increasing portion of the population of the Province are unvaccinated.

2. That thereby the danger of small-pox epidemics, when it exists in Britain, with the increasingly short ocean passages, is yearly becoming greater.

3. That ignorance of its real prophylactic value, apathy, and fear of the results of vaccination, are the main individual reasons why vaccination is neglected ; while the absence of properly constituted Local Boards of Health, or other municipal health machinery, has hitherto been the main reason for municipal disregard of the Act, cap. 191, R. S. O.

4. That scientific evidence proves that the transmission of at least one specific disease through vaccine virus is possible, but that as a matter of fact the dangers of transmission of such through vaccination are but slight ; and that the constitutional state of the patient must be viewed as the chief factor in those cases, where unfortunate results have followed vaccination.

5. That the establishment of Local Boards, and the appointment of Medical Health Officers, supply a machinery which may be fairly expected to advance general vaccination very greatly.

6. That the removal of the fear of the transmission of specific disease by vaccination, will be greatly aided by the establishment of a Vaccine Farm, having the imprimatur of the Government to give it good repute.

7. That the conveniences for such an institution at the Agricultural College, Guelph, are everything that can be desired ; while the actual outlay on the part of the Government means simply the expense involved in keeping some four or five animals throughout the year.

8. That the amount of labour which will be required from the veterinarian and his assistants, in carrying on the work of preparing the vaccine, must be very considerable, leaving out altogether the question of finding a market, and working up the business from a commercial stantpoint.

9. That should the Government consent to the expense attendant upon supplying conveniences of stabling and keep, the Board would consider that whatever business arrangement could be arrived at by the Government, by which Mr. Grenside would be willing to undertake the carrying on of the work, is a matter with which the Board is not called upon to deal, and that, therefore, it has no opinion to express in the matter.

All of which is respectfully submitted.

Signed, { CHAS. W. COVERNTON,
PETER H. BRYCE.

APPENDIX VIII.

A REPORT ON THE ADVISABILITY OF TAKING PRECAUTIONS TO PREVENT INFANTICIDE IN THIS PROVINCE, AND ALSO SUGGESTING THE BEST MEANS BY WHICH THE PRESENT LARGE MORTALITY AMONG THE FOUNDLINGS OF THIS PROVINCE MAY BE DIMINISHED.

To the members of the Provincial Board of Health.

GENTLEMEN.—At the bottom of page 5 of our first annual report, it is recorded that on motion of Dr. Cassidy, seconded by Dr. Yeomans, and carried, a Committee, consisting of Drs. Covernton, Hall, and the mover, was appointed to discuss measures for the establishment of a "home for foundlings."

The Committee here referred to did not report. At our last quarterly meeting, another Committee, consisting of Drs. Covernton, Bryce, and Cassidy was appointed, with instructions to report to the Board on the advisability of taking further precautions to prevent infanticide in this Province, and also suggesting the best means by which the present large mortality among the foundlings of this Province may be diminished. The following report is therefore presented as an endeavour to solve the difficulties surrounding these important questions:

In examining the literature of the subject, we find that a law to prevent infanticide, was passed in England in 1690. It was copied after a model, which had been used in some other countries, (edict of Henry II., in France) and authorizes or obliges a jury to convict on proof of certain *indicia* or presumptions of guilt, without direct evidence of murder. The circumstances selected for this purpose, are that the woman has concealed her pregnancy during the whole period thereof, as she had not called for help to her delivery, and that the child is found dead or missing. The penalty. in case of conviction, was death by hanging. Many capital sentences did certainly pass, and were executed in pursuance of verdicts, which proceeded on the statutory evidence only. This evidence was often insufficient, as it was sworn, in the case of Ann Davidson, (July 5, 1762) by Dr. Young, that the swimming of the lungs was not a certain symptom of living birth, for that this would happen if the child gave a single sob, though it died in the birth, and that it might also be the effect of putrefaction. The Act of 1690 being very severe, it was afterwards modified and a fresh enactment passed in 1809 (49 George III., c. 14). The description of the offence is copied from the previous Act. By this law, a concealment of pregnancy, and a failure to call for help in the birth, are not to be viewed as grounds of suspicion of a wilful murder, but rather as a species of culpable homicide. This statute is not an entire new arrangement of the whole law respecting this class of misdemeanours. It is a special Act for mitigating the pains of an aggravated case, and leaves the common law untouched. The penalty in case of a conviction, under the Act of 1809, is imprisonment for a period not exceeding two years. (*Vide Hume on Crimes.*)

Infanticide occurs rarely in this Province. In the Registrar-General's Report for 1882, only one instance is recorded, though the illegitimate birth-rate for the same year is one in every forty-three births. Two instances, of what appeared to be infanticide, were recorded in our daily papers as having occurred in this city last summer; and with an increasing population, it may reasonably be expected to happen more frequently.

The fact that it is so rare in this Province, apparently speaks well for the humane feelings of the unwedded mothers and the persons with whom they are brought in contact, at a time when the temptation to commit this crime must be very strong. Admitting this, a partial explanation of our freedom from this crime may be found in the fact that a majority of the illegitimate births reported in this Province occur in lying-in hospitals. Children born in such places are only exposed to the ordinary risks attending all births; their real

peril begins with the period of nursing, when they are exposed to all the malign influences of baby-farming. So true is this that some might be willing to ascribe our freedom from infanticide not to the humanity of the mothers, but to the almost moral certainty which prevails in their minds, as well as the minds of most people, who have paid any attention to the subject, that few, if any, infants survive a short period of baby-farming; for though the expression of our opinion may be severe, we cannot shut our eyes to the fact, that these unhappy mothers are of necessity desirous that their infants should perish. Farrer, an eminent legal authority, in writing of certain special crimes, says, "Infanticide is equally the result of the unavoidable dilemma in which a woman is placed, who from weakness or by violence, has fallen. Finding herself placed between the alternative of infamy on the one side, and the death of a being insentient of its pains on the other, how can she fail to prefer the latter to the infallible misery awaiting herself and her unhappy offspring." Referring to another feature of this question, he writes: "I do not pretend to diminish the just wrath these crimes deserve, but in indicating their sources, I think myself justified in drawing one general conclusion, and that is, that no punishment for a crime can be just—that is necessary—so long as the law has not adopted the best possible means in the circumstances of a country to prevent the crime it punishes." What means should be employed to prevent the crime of infanticide, Mr. Farrer does not mention. He may possibly allude to legislative efforts employed to throw difficulties in the way of seduction. But assuming, as we are entitled to do, for the purposes of this paper, that illegitimacy will always continue to exist in every civilized community, it must be plain to every one that lying-in hospitals, easy of access, will be one of the surest means of preventing infanticide, particularly if women about to give birth to illegitimate children, feel obliged to go to such places. Now the passage of an Act similar to the English Act against infanticide, of 1809, would have the desired effect, because in addition to placing themselves in good sanitary conditions at no expense, the prospective mothers would escape all legal responsibility in case their infants should be stillborn. But, if being in easy circumstances, they prefer to be confined in private houses, they would, during or about the time of labour, be obliged to place themselves under the charge of a physician or midwife, because, according to the Act, in case the child were found dead or missing, the very fact of not having made any proper provision for its birth, would be taken as an evidence of criminal intent. It appears more reasonable to expect success in preventing infanticide, by removing the occasions of crime from the paths of fallen women, who are about to become mothers, and by the aid of legislation, framed so as to guide them in the right path at a critical time, rather than to endeavour to deter them from committing the crime merely by the imposition of penalties, for infanticide must necessarily be difficult of legal proof, and will not be punished as it deserves even though the evidence should fully warrant a conviction. Another important means of preventing infanticide, would be the establishment of suitable infant asylums. A detailed reference to this feature of the subject will appear further on in this report.

In order to reduce the very large mortality among foundlings in England, an Act entitled "The Infant Life Protection Act," was passed in 1872 (35-36 Vict.) Some of its provisions are (1) That the houses of persons retaining or receiving for hire two or more infants for the purpose of nursing must be registered. (2) The register of names and houses is to be kept by the local authority. (3) The local authority may refuse to register. (4) Persons whose names and houses are registered must keep a register of infants and must produce it when lawfully required. (5) Forging of a certificate and falsifying a register are subject to a penalty. (6) The local authority may strike a name and house off the register for neglect. (7) An inquest must be held on the death of an infant unless a certificate signed by a qualified physician shall be produced by the person so registered, certifying that such physician has personally attended or examined such infant and specifying the cause of death, etc. (8) The punishment under the Act is imprisonment with or without hard labour for not more than six months, or a penalty not exceeding five pounds.

Such an Act would seem very suitable to the requirements of this country. Should it ever be introduced, it would be well to make provision for a regular inspection of baby-farms by the Medical Health Officer of the municipality. It is quite likely that if this

plan were adopted the mortality among foundlings, which all physicians practising in this city have noticed, would be much lessened, and the grave scandals, which are linked with the very name of "baby-farms" would be practically abolished.

If however, we are willing to do more than prevent infanticide, at or immediately after birth, so far as legislation can help to do so, if we are willing to aim at more than to do away with the culpable neglect and ill-treatment at present meted out to foundlings in baby-farms, if we are really desirous of securing for these unfortunate beings—the most destitute and helpless of all—a tolerably safe voyage through the perils of infancy, we cannot begin the work in a better way, than by making an appreciative study of the later statistics of foundling asylums in Massachusetts, where the difficulty of properly providing for foundlings has been triumphantly solved.

In the third annual report of the State Board of Health Lunacy and Charity of Massachusetts, 1881, under the heading "Foundlings and Deserted Infants," we find the following interesting statement:—"After years of effort and careful experiment it was found impossible to save the lives of the foundlings sent to Tewkesbury. At the same time the large number found dead in Boston and its vicinity, and the great mortality among this class in that city attracted public attention, and some action was desirable. Accordingly, the Board of State Charities prepared and induced the Legislature of 1867 to pass an Act incorporating the Massachusetts Infant Asylum. This was followed in 1870 by a supplementary act placing the infants legally committed thereto, in the custody of the State Board, and defining the manner and rate of their maintenance. The Inspectors and Superintendent at Tewkesbury were advised in 1878, and earlier, to receive no more foundlings, but rather to include such in the class covered by the Act of 1865 as "persons whose health would be endangered by removal." They finally acted on this advice in 1879, and the foundlings were sent in large numbers to the Infant Asylum, the capacity of which was soon exceeded, whereupon the Legislature of 1880 provided as follows:—

Whenever the Massachusetts Infant Asylum is full of inmates, or when from sickness or other sufficient cause it is not expedient to receive or retain any infant legally committed thereto, said infant being a State pauper, it shall be the duty of the State Board of Health, Lunacy and Charity to provide for such infant in a proper family or other suitable place, under the constant supervision of its Medical Officers till it shall reach the age of two years, or is otherwise provided for by said Board under existing laws."

Upon notice of the State Board from overseers of the poor or otherwise, all suitable infants are to be sent to a receptacle in Boston, provided by the Infant Asylum. They are there examined by its physicians, and, if approved, are sent to its establishment at Jamaica Plain, where the number on hand at one time, is seldom allowed to exceed eight or ten. They are there wet-nursed, if possible, for a period, and then transferred to families in the country, where they are reared under the supervision of ladies connected with the asylum, till two years old, unless they are previously adopted or otherwise disposed of. The asylum also maintains a branch at West Medford to obviate any dangers from excess of numbers in its main establishment.

Those rejected by the physicians, and the infants too feeble or diseased to be offered for their inspection, are placed according to the law of 1880 in suitable homes under the care of the Medical Officers in the department of out-door poor. Those homes are selected in several counties, and in as many towns as possible,—generally those towns which have not been pre-occupied by the Infant Asylum, in its system of boarding-out infants.

At the Infant Asylum, and under the direct care of the Board, 233 infants were treated as follows:

Massachusetts Infant Asylum	Infants.
Number remaining in the Asylum, October 1st., 1880	73.
Since admitted to the Asylum	42.
In all, at the Asylum	115.
Of those there were discharged well	31.
There died	15.
Remaining October 1st., 1881	69.

The percentage of mortality among these 115 selected children was lower than that of infants in ordinary families,—viz., 13·04. Nine of these deaths occurred, as many of these deaths naturally occur, in August and September, and only six in the rest of the year.

The infants taken in charge by the Board directly, were, during the same year, 118, all of whom, as above mentioned, were placed in families, under the care of the Department of Out-door Poor; and the results of the year were as follows:

OUTSIDE FOUNDLINGS.

Infants remaining, October 1st., 1880	34.
Since taken in charge by the Board	84.
In all	118.
Of those there were discharged well	28.
Those died	30.
Remaining, October 1st., 1881	60.

The percentage of mortality among this inferior class of infants was, of course, greater than among the Asylum infants, viz., 25.42. Twenty-four of the deaths occurred in July, August, and September, and only six in the nine remaining months.

In all, the State cared for 233 infants, of both classes, and the percentage of mortality among all who were cared for within and without the Asylum was 19.32; only forty-five known deaths occurring among 233 infants less than two years old. That is to say, less than twenty per cent. of all the infants thus cared for, are known to have perished: and most of those who died were so diseased when received, that it seemed impossible they could survive, while many revived, whose chance of life at first seemed small. This is an encouraging result, especially when it is remembered that, under the practice prevailing before 1867, nearly all such infants died within their first year, and that more than half of them died previous to 1880. Comparing the rate of mortality the past year, among those infants, with the common rate among children of all kinds, under one year of age in the Massachusetts cities and towns, we find the comparison favourable to these waifs of the State. In Lowell, the death rate among all infants, has been twenty-three per cent.; in several other cities, it has exceeded twenty-two per cent.

The success here mentioned, has not been accomplished without great labour, unceasing watchfulness, and unusual expense; but this has been necessary, if we would relieve the State from the reproach often cast upon it for the many deaths of these infants in the alms-houses, in city boarding-houses, and wherever "baby-farming" prevailed.

Following natural laws which prescribe for one infant, the care of one woman,—retaining few in their commodious buildings, and supplying those few with nurses when possible—the ladies who manage the Asylum have placed all the rest in suitable families, where they were under the oversight of medical visitors, and where they received tender care, and a vigilant supervision. Consequently most of those infants, since this system was adopted about ten years ago, have been saved, and probably two-thirds of all the infants received since the Asylum was opened (nearly 1,100 in all) are alive to-day. It cannot be expected that the same will be true ten years hence, of the neglected infants, directly cared for by the Board; but the results attained since April, 1880, are probably no better than we may look for hereafter, should the same care and vigilance be exercised by the State authorities.

The cost of supporting these 233 foundling and deserted infants, during the year ending October 1st., 1881, has been about $23,000, or about $100 each, without reckoning the salaries and travelling expenses of the medical visitors of the State.

Of this cost, about $14,500 have been paid to the Massachusetts Infant Asylum, for an average of nearly seventy infants during the year, and $8,500 for an average of about fifty-five infants, directly cared for by the Department of Out-door Poor. Allowing $1,500 as the cost of medical visitation for these infants, the average weekly expense of each during the year, was about $3.50 for those under the direct charge of the Board, and about $4 each for those in the Massachusetts Infant Asylum. That is to say, the State now pays less than $25,000 a year to save the lives of more than 180 infants, when formerly it paid $10,000 a year to save the lives of only a few such infants."

Charitable people in Toronto have not been idle in indeavouring to secure an improvement on the large mortality rates customary in Foundling Asylums. As an indication of what is now being done, and the results which have been achieved in the Infants' Home in this city, we now publish the mortality statistics of that Institution for the last two years. together with a letter from the attending physician, Dr. Spencer.

INFANTS' HOME, TORONTO.

	Died.	Inmates.	Percentage.
1883	59	169	35
1884	51	165	31

The following is Dr. Spencer's Letter :—

8 BLOOR STREET EAST, 29th October, 1884.

MY DEAR DOCTOR,—Your note received, and, in reply to your questions touching the infants at the Home, I would say :—

1. All infants, with the exception of those who are too old for such feeding, are wet-nursed by healthy young women, each of whom, if she is strong enough, has two infants allotted to her to nurse, her own and a "charge."

2. Children too old for the breast are spoon-fed, no bottles being used in the Home, thereby doing away with any possibility of bowel complaints from sour milk or improperly cleaned feeding bottles.

3. All nurses, on admission, are examined by the medical officer in attendance, and only those who are healthy and have a good supply of milk have a "charge" assigned to them. Any nurse suffering from syphilis would be promptly rejected.

4. The percentage of syphilis among the infants is very low, perhaps three or four, while scrofula is much more common ; fifteen or twenty per cent. would not, I fancy, be too high an estimate.

5. Should an infant develop syphilis after admission it would be treated by mercurials, either by inunction or with hydrargyrumcum creta, and the nurse would be kept under constant supervision for fear of infection, her other infant being handed over to some other nurse or being fed by hand. The year ending October 1st, 1884, we had 165 infants admitted and fifty-one deaths, the rate thus being about thirty per cent. Several of these, however, came in in a moribund condition from the effects of exposure, drugs, baby farming, etc., some of them dying a few hours only after admission.

If I can at any time give you any information, or if you would like to go over "The Home," I shall be most pleased to be of any such service to you.

Believe me, yours sincerely,
BERTRAM SPENCER.

J. J. CASSIDY, M.D.

To recapitulate: Your Committee consider that a law similar to the English "Infanticide Act" of 1809, would be useful in deterring from the crime of infanticide ; but that the establishment, wherever needed, of well-equipped lying-in hospitals and infant asylums, would act more efficiently in this direction, by removing the proximate occasions of this crime.

The "Infant Life Protection Act" might also be copied with advantage, if no radical plan for preventing the waste of life among foundlings were contemplated.

At the same time, we would cordially recommend to the favourable consideration of the Ontario Government, the exceedingly good results in the saving of life among foundlings, which have been obtained in the State of Massachusetts. And, moreover, as we find that the system of rearing infants, followed at the Infant's Home in this city, is scientifically correct, and fairly successful, if measured by results, we would recommend that all other foundling asylums in this Province, desirous of receiving aid from the Government, be induced to adopt a similar system.

All of which is respectfully submitted.

JNO. J. CASSIDY,
CHAS. WM. COVERNTON,
P. H. BRYCE.

Toronto, November 26, 1885.

APPENDIX IX.

SPECIAL REPORT ON THE SEWAGE SYSTEM OF THE TOWN OF WOODSTOCK.

To the Chairman and Members of the Provincial Board of Health :—

SIR,—In accordance with instructions contained in a resolution of the Board passed on the 14th September, the Committee on Sewage, Drainage and Water Supply met on the 21st September to consider the question of the sewerage of the Town of Woodstock.

The Committee had not the evidence before it that the various steps preliminary to an investigation by the Board under section 36 of the Act of 1884, had been taken. For example : that the Local Board of Health had required the "removal or abatement of a nuisance or thing prejudicial to health," and had found "that default had been made." We considered, however, that we could comply with the spirit of the request of the Local Board of Health by taking action under section 3 of the Public Health Act. 1882.

As long ago as May, 1881 (the year previous to the formation of the Board), Dr. Oldright, now one of the members of this Committee, was consulted by a prominent citizen of Woodstock as to the advisability of allowing water-closets to be connected with the sewer, and had expressed his opinion in the negative. From the statements made to him he did not consider the supply of water sufficient to keep the sewer free from deposit, nor the output a proper one for receiving sewage of this character. A by-law was passed prohibiting closet connections, but the question has formed a frequent subject of debate, and it was thought that it would be very desirable to accede, as far as could be, to the request of the Local Board by making an investigation under the Act (that of 1882), and it was decided that Professor Galbraith should proceed to Woodstock. He did so and has reported as follows :—

"I visited Woodstock on the 23rd instant and was driven by Dr. Mackay over a sufficient extent of ground to enable me to get a good idea of the natural facilities for sewerage and sewage disposal. In the afternoon of the same day I met the Local Board and a number of other gentlemen interested in sanitary matters at the Town Hall. A general discussion of the state of affairs ensued, during which a great deal of valuable information was afforded and many useful suggestions made.

"*Description of Ground.*—The Town of Woodstock has a population of about 6,000 within the town limits, and there are about 2,000 in the suburbs. The principal part of the town proper is situated on a mound surrounded by three railways, which lie approximately in the natural drainage depressions.

"On the west side are the River Thames and the Credit Valley Railroad ; on the south side are Cedar Creek, flowing into the Thames, and the Great Western Railway ; on the east and north sides is the valley occupied by the Port Dover Railway. The inclination of one portion of this valley, or rather depression, is towards Cedar Creek, and of the other portion towards the Thames River.

"*Sewerage.*—On Dundas Street, which lies east and west, roughly parallel to the G. W. R., there are two sewers—one running west and discharging into Cedar Creek, and one running east and discharging into a common open drain in the depression before mentioned as occupied by the P. D. R. The sewer which runs westward consists of eighteen-inch glazed earthenware pipe, with cemented joints. It is about 4,100 feet in length and is laid with three grades. From the upper end at the summit on Dundas Street it runs 2,000 feet on a grade of .6 feet per 100 feet ; thence 1,100 feet on a grade of 4.4 feet per 100 ; thence 1,000 feet to the outlet at Cedar Creek on a grade of

.6 per 100. It has two lateral nine-inch pipe sewers connected with it: one on Finkle Street running from O'Neill's hotel, 440 feet long, on a grade of about five feet per 100 feet, and the other on Graham Street about 800 feet long and with a good fall. At the head of this sewer is a flushing tank having a capacity of between 200 and 300 cubic feet. The outlet valve has an opening fourteen inches square. The sewer on Dundas Street which runs easterly consists of twelve-inch pipe. It has no lateral branches.

"The sewers are laid in the middle of the street and furnished with man-holes at distances apart varying from 500 to 1,000 feet. These man-holes are not furnished with ventilating covers and their bottoms are below the level of the sewer, thus causing obstruction to the flow.

"There are catch-basins for surface water at the street corners, which are connected with the sewers. These are furnished with traps.

"The sub-soil in the upper and easterly portion of Dundas Street is said to be clay. The cellars in this portion are connected with the sewer by small piping. The lower, westerly end of Dundas Street has a sub-soil of gravel and sand, and the cellars there are not connected with the sewer. I do not know whether these cellar connections are all trapped—some of them are.

"The above are the only sewers in the town. The drainage in the rest of the town is on the surface.

"*Waterworks.*—The waterworks system consists of piping in which water is maintained at a sufficient pressure by a steam engine for fire purposes. The water is taken from Cedar Creek and is not used for drinking.

"*History of Construction of Sewers.*—The sewers were built about the year 1881, and paid for by a special tax on the residents or property owners on Dundas Street. It is said that many of the persons taxed, whose cellars are dry and do not require drainage, consented to the construction of the sewer under the impression that they would be allowed to connect water-closets and sinks with it. A by-law was passed three years ago by the town Council prohibiting the admission of anything to the sewer except surface water and the drainage from cellars. On the sewer running westward, however, the following connections have been made contrary to the by-law:—Six hotels discharge washing water, drainage from yards, overflow from cess-pools, fæcal matter and urine from water-closets, and all kinds of dirty water, into the sewer. All the above kinds of sewage are not discharged by each hotel. The post-office and two banks have water-closets connected with the sewer.

"The washing water from four stores, the brine from a pork establishment, the drainage from the yard of a livery stable, and the sink water from a block of tenements also enter the sewer.

"*Object of Sewer.*—It may be asked what was the object in building the sewer if not to serve the above and similar purposes? As far as could be learned, the main object was to carry off the surface and cellar water, but, as has already been mentioned, it seems that a certain number consented to its construction with the idea that they would be permitted to use it for other purposes—their cellars not requiring drainage.

"The objections to the use of the sewer for conveying ordinary sewage are as follows: Foul smells have been noticed at the street catch-basins and in cellars. There seems to be some doubt as to whether the joints are tight and properly made. There is not a sufficient water supply to convey the sewage and prevent the solid matter from adhering to the pipe. Cedar Creek, from the outlet of the sewer to the river, a distance of about half a mile, is crooked and has a slow current. It is from ten to twenty feet wide and only a few inches in depth at low water.

"It seemed to be the general impression among the members of the Local Board and other gentlemen present at our interview, that it would be a less evil to allow liquid sewage to be discharged into the sewer, under proper precautions, than to dispose of it in any other way, and in this view I concur.

"*Improvements Advised.*—It would be a matter of very great expense to uncover the whole sewer and examine the jointing. It would, in fact, amount to rebuilding the sewer, and this would not be advisable until experience had shown it to be necessary.

"The Local Board must satisfy themselves that all connections are properly trapped, and the traps supplied with water.

"Want of sufficient water is one of the great evils in the present case. The traps in cellars and street catch-basins become dry and allow the out-flow of air from the sewer. Householders should be advised to examine their traps from time to time, and keep them supplied with water. The catch-basins should be supplied with water whenever necessary by the municipal authorities.

"All the present covers should be taken off the man-holes, and their place supplied with large, strong gratings, to allow as much ventilation as possible to the sewer. The bottoms of the man-holes should be built up to the level of the sewer, and rounded so as to correspond with the section of the pipe, in order not to obstruct the flow. The sewer should be examined by means of lamps, and all present obstructions removed by flushing first, and if that does not succeed, by tools used for cleaning sewers. An effective method of flushing would be to stop the entrance of the sewer in the second man-hole from the summit, and then pour in as much water as may be considered necessary at the flushing tank, and suddenly remove the stopper by means of a rope previously attached to it. This method would give more flushing power than the flushing-tank alone. The flushing-tank, if used often enough, would be sufficient to keep the sewer in good condition, provided only liquid sewage were admitted to it.

"The outlet on Cedar Creek is not good, and the probability is, that within a few years, the lower 1,500 feet of the sewer will have to be rebuilt on a different grade, in order to get sufficient fall to discharge the sewage at a point much nearer to the Thames River than at present. It must be remembered that the improvements now suggested cannot be considered as serving more than a temporary purpose, and that within a few years it may be necessary to consider the sewerage of Woodstock on a much more extensive scale than at present. It has been my endeavour, however, not to suggest any work for present relief, which would likely have to be undone when more extensive improvements shall be carried out.

"The outlet of the eastern sewer on Dundas Street, is such that I could not advise the discharge of even liquid sewage into this sewer. Nothing but surface and cellar water should be allowed to enter it. I am of opinion that the use of this sewer for ordinary sewage will have to be deferred, until the time above alluded to, when it shall become necessary to consider the general question of sewering the whole town.

"Having thus advised the present use of the Dundas Street sewer and its branches for liquid sewage, it becomes necessary to state how solid refuse, fæcal matter, etc., shall be disposed of. I would advise the burning of kitchen refuse in the stoves to as great an extent as is found possible, the deposition of other refuse in the ash heap, and the introduction of the dry-earth closet. Where it is not convenient for individuals to dispose of the resulting products, the municipality should provide means of removal to proper places. All present privy-pits and cess-pools should be done away with.

"The above suggestions, with regard to the disposal of liquid sewage, apply only to Dundas Street and the streets sewered into it. The suggestions with reference to the disposal of solid refuse, the abolishment of privies, and the adoption of the dry-earth system apply to the whole town.

"The disposal of liquid sewage where there is sufficient garden space is not a matter of much difficulty as it can be sprinkled over the ground, but where there is not sufficient ground to render this method advisable, sewers should be introduced. It would probably be found necessary to do this first in that part of the town which will naturally drain into the Dundas Street sewer. This will hasten the consideration of the new position of the outlet before mentioned and the subsequent disposal of the sewage. In the course of time, when Woodstock is fully sewered, it may be found necessary to chemically purify the sewage before allowing it to flow into the Thames.

"All of which is respectfully submitted.

"J. GALBRAITH.

"25th September, 1885."

At a meeting of this Committee, held to-day, the above report of the Sub-Committee has been read and adopted, and it has been decided to report at once to you as Chairman of the Board, so that if you think it well, in order to avoid delay, the opinions of this Committee be made known to the Local Board of Health of Woodstock you can cause them to be so made known.

In regard to the last portion of the letter of the Local Board of Health (dated 17th August, 1885), which portion your Committee understands as a request that the Provincial Board shall cause the nuisance, arising from an improper use of the sewer, to be abated, your Committee would again point out, and respectfully submit that the Provincial Board cannot act, under Sec. 36, until the Local Board has exercised its powers (under Sec. 32 of the Act of 1884, and such other sections or Acts as may apply to this case), and has failed through any of the reasons set forth in Sec. 36. Nor can the Provincial Board act under Sec. 38, inasmuch as this is not a "*contemplated* system of sewerage." It now remains for the householders, owners and local authorities of Woodstock to take action.

All which is respectfully submitted.

WM. OLDRIGHT,
J. GALBRAITH.

Toronto, 5th October, 1885.

APPENDIX X.

SPECIAL REPORT ON MARITIME AND LAND SANITATION.

OFFICE OF THE PROVINCIAL BOARD OF HEALTH,
TORONTO, April 22nd, 1885.

To the Hon. A. M. Ross,
Provincial Treasurer:

DEAR SIR,—Your favour of the 13th inst., enclosing a communication from the Commissioner of Agriculture at Ottawa, in answer to a copy of resolutions passed by our Board at the last quarterly meeting, having regard to certain precautions to be attended to in the matter of sea-board and inland quarantine; as also the report of Dr. Blaxall, on Sanitary Aspects of Emigration and Immigration, has been received.

On the remarks made by the Minister of Agriculture on these resolutions, we beg respectfully to make a brief comment: During the last year we have had in this Province four epidemics of small-pox, clearly traced to European immigrants, unmistakably demonstrating that, in spite of all that has hitherto been done by European Legislatures, as well as by those on this side of the Atlantic, the precautions requisite for the prevention of the spread of contagious disease are still imperfect. In further evidence of their being so, we would quote the following recommendations of Dr. Blaxall, who was commissioned by the Local Government Board, to investigate into the sanitary aspects of British immigration and emigration practice. His account of existing arrangements made for detecting infectious disease among persons arriving at British ports from Continental ports to embark for this continent, conclusively points to the necessity for some such change as these recommendations cover:

"(1) *As to intending emigrants.*—It is desirable that (*a*) shipping agents should be instructed to enquire carefully as to the health of intending emigrants and their families, with regard to freedom from dangerous infectious disease, (small-pox, measles, scarlatina, diphtheria, whooping cough, typhus, typhoid fever, cholera, erysipelas, chicken-pox). Also, as to whether they have been vaccinated, re-vaccinated, or had small-pox. The form of inquiry should be incorporated on the contract ticket, so as to remove it from the sphere of chance. (*b*) The shipping companies should instruct their agents to keep themselves acquainted with the health of the districts in which they reside, and to report to the companies the prevalence of any infectious disease. (*c*) The agents should impress upon the emigrants the importance of avoiding any exposure of themselves to infection after engaging their passage; should advise them as to the best lodgings to go to at the point of embarkation, and should use their best endeavours to prevent the bringing on board of ships any bedding or other articles that may have been exposed to infection.

There would, however, be considerable advantage if inquiries of the above sort were made, and needful action taken upon them; and, if, also, the requisite medical supervision and examination of emigrants were ordered, by a single authority, instead of being divided, as at present, between officers responsible to shipping companies, to the Board of Trade, and to the local sanitary authority; and there would be certain further advantages if the emigration health authority of each port could be in relation with the authorities of other ports. Experience will show whether some other functions in regard to the health of shipping while out of port, would not naturally devolve upon the same health authority.

(2) *As to medical inspection of emigrants.*—(*a*) On arrival in the United Kingdom from the Continent of Europe, emigrants on their way to America and elsewhere, should be subjected to efficient medical inspection in a duly appointed place, suitable for the purpose.

(*b*) All emigrants should be placed under systematic medical supervision during their stay in lodgings, pending embarkation, with a view to the immediate detection of any symptoms of infectious disease among them.

(*c*) The final inspection of emigrants before embarkation should be made by the same medical officer who has been entrusted with the supervision of them in lodgings, and such inspection should take place, under favourable circumstances as regards light, space, shelter, and freedom from confusion.

(*d*) These inspections should include all emigrants, whether in short ships or otherwise.

(*e*) Emigrants detained at ports of debarkation, or in any lodging-house or depot, or removed from ships on account of suspected infection, should be kept under observation with proper precautions respecting them, until the nature of the disease is declared.

(3) *As to lodging-houses.*—The depot system offers such considerable advantages that it is desirable it should be generally adopted. At the same time there are undoubtedly practical difficulties in the way of carrying this out, such as the fluctuating character of the trade, the immense number of passengers, and the number of shipping companies engaged. Still, I think it feasible, and an effort should be made to bring it about.

But whether the depot system be adopted or not every emigrant lodging-house should be provided with rooms, in which cases of illness suspected to be of an infectious nature can at once be isolated; and scrupulous care should be taken to insure all such houses being kept in a thoroughly sanitary condition.

(4) *As to precautionary measures on board ship.*—It is important (*a*) That infectious hospitals should be provided on the weather deck in the least frequented part of the ship.

(*b*) That the surgeons should be instructed to make daily inspection of emigrants during the voyage, and to secure the immediate isolation of cases presenting suspicious symptoms.

(*c*) That record should be kept of the particulars of all cases of infectious disease that come under treatment, including any deaths that may occur during the voyage.

(*d*) That emigrants, *i.e*, persons embarking for the United Kingdom, should be subjected to medical inspection by the surgeon of the ship at the time of embarkation.

(5) *As to Cattle Ships.*—A week at least should elapse between the landing of cattle from a ship, and the use of the ship for emigrants. The ship meanwhile should be thoroughly cleaned, to the satisfaction of the port sanitary authority.

(6) *As to Ships' Crews.*—Shipping companies should take steps to secure the re-vaccination of their officers and men, making it a condition of service. The surgeons of the ships should be required to make special report to the shipping companies as to compliance with this regulation.

(7) *As to Coastwise Vessels.*—Steps should be taken to insure coastwise vessels leaving port free of infectious disease, and to establish a uniform system of inspection of vessels in harbour throughout the United Kingdom, to insure their being kept in a wholesome condition."

1st. While fully concurring in the truth of the remarks of the Minister of Agriculture concerning the want of power of the Government of Canada, in the absence of an international agreement, to assist in the enactment of measures for the removal of these evils, we would remark that public attention has of late, in medical and lay journals, been prominently called to the subject, and that the inhabitants of British seaports having suffered from the want of sufficiently minute inquiries into existing port regulations, the present time for protest from those Colonies that are yearly receiving from Europe large numbers of emigrants, is an opportune one. The statement of the Minister of Agriculture that no international co-operation exists, made it appear to the Board all the more desirable that facts should be stated, showing the necessity for the Government making arrangements for such co-operation.

2nd. To the second proposition communicated by the Minister, we would remark that the Board considered it would be practicable for the Dominion Government to make

arrangements with the port surgeon, to send information, by cablegram, of the departure of vessels carrying emigrants that had come from infected countries bound for Canadian ports.

3rd. Regulations regarding hospital accommodation on board emigrant ships, when they exist, it would appear from Dr. Blaxall's report, are not well adapted to their purpose, by reason of position on the part of the deck frequented by the steerage passengers, and their want of efficient ventilation. Dr. Blaxall also adverts to the inferior accommodation provided for the surgeon—his birth, in some cases, in the dispensary being surrounded by medicines and with no other place to sleep in. In other ships, the cabin allotted to him is small, dark and badly ventilated, thus, in every way militating against his keeping any reasonable record of the cases of sickness that occur during the voyage.

4th. Ships bringing emigrants to our ports, subsidised by the Dominion Government, and owned principally by stockholders in Canada, would, the Board supposed, be in some measure, under the control of the Government, particularly at a time when an invasion of cholera was deemed probable; and, entertaining that view, the Board considered that regulations for the government of ship surgeons would be conducive to getting quickly under control, if not eradicating the disease before the arrival of the ship in port.

5th. From information the Board has received, they were under the impression that whilst at Grosse Isle, an isolation hospital for the care of the infected, had long been in existence, no building for the sequestration of passengers or crew who might have been exposed to infection during the voyage, and who, therefore, might have the *virus* of the disease in their system, and consequently required careful watching until the lapse of the period of incubation for the several contagious diseases, has been produced.

In a time when an epidemic of cholera was, to say the least, extremely probable, the Board considered it important to allude to the urgent necessity for such a building, or rather, buildings, as accomodations provided for cabin passengers should obviously be of a superior character to those for crews and immigrants, or otherwise there would be danger of the few days' detention being sought, by a variety of ways, to be avoided. As the duty of Boards of Health must be based only on a sanitary stand-point, every means should be adopted, which shall make the inconveniences connected with a short detention as few as possible. The consequence naturally will be that the paramount authority of the Government ordinances, providing for the health of the people, will be recognized and submitted to.

As amongst the immigrants coming to the country, there are to be found alarge number of Germans, Danes, Norwegians, Swedes, and other nationalities, who proceed from their various countries by the vessels of various shipping companies to British ports for embarkation to this Continent, it is important to know whether sufficient precautionary measures are taken by the agents of these companies to prevent the introduction of infectious disease into British ports, and from thence to our shores, Dr. Blaxall on the subject says :

"(1) No efficient precautionary measures are adopted to prevent the introduction of infectious disease into the United Kingdom by 'transmigrants.'

(2) With the exception of the medical certificate by certain Colonial Governments from intending emigrants on applying for their passage, and the provision made by certain of the shipping companies for the medical examination of transmigrants at the lodging-houses, no precautionary measures are adopted to prevent the spread of epidemic disease by emigrants at the various stages of their course, nor to protect them against the risk of contracting disease at the ports of final embarkation.

(3) That the Board of Trade medical inspection of emigrants on embarkation, to provide against the introduction of infectious disease into the ships, is conducted under difficulties, such as the exposure to weather, etc., that militate against its efficiency.

(4) That there is a want of due precautionary measures on board ship to guard against the spread of disease."

In further illustration of the necessity for additional precautions for the prevention of the introduction and spread of disease of an infectious character, the Board desire to

call the attention of the Minister of Agriculture to the following remarks of Dr. Blaxall on the subject :

To begin with intending emigrants :

The Colonial Governments, Canada excepted, before granting free or assisted passages to British emigrants, require, amongst other qualifications, that every applicant shall furnish a certificate to the effect that he is free from infectious disease, and has been vaccinated, or had small-pox ; a very wise precaution, but one which loses its value in proportion to the length of time that elapses between the granting of the certificate, and the final departure of the emigrant from home, seeing that in the meanwhile he may, in various ways, be exposed to infection, and so contract disease.

The shipping companies, on the other hand, observe no such precaution, their agents, so far as I could learn, having no instructions to inquire into the health of intending emigrants (British or foreign), as regards freedom from infectious disease, etc.

The Scandinavians and Icelanders, I am informed, are required by their respective Governments to undergo medical examination before they embark on board the continental steamers, which, in the busy season, are crowded with passengers.

On arrival at the British ports these vessels are boarded by the custom-house officer, who, in accordance with the requirements of the Quarantine Act, makes inquiry of the captain as to the health of the ship, agreeably to a prescribed form which the captain is required to sign, when, if the report be satisfactory, the passengers are allowed to land. Here I would submit that this sort of enquiry is not calculated to detect the presence of infectious disease ; for the custom-house officer is not acquainted with its nature, and the captain, with his multifarious duties to attend to, can hardly be expected in a short passage of from forty to eighty hours, to know much about the individual state of health of the hundreds of passengers on board ; hence, infectious sickness might be present in the ship without coming to his knowledge, when he, through ignorance, giving a favourable report to the custom-house officer, the infected persons would be landed along with the other passengers, to the imminent risk of spreading disease on shore—for the sanitary authority are not concerned in the debarkation of transmigrants ; thus it happens, that a ship, once passed by a custom-house officer, the passengers are free to proceed on their way, going, if in London, direct to lodgings, both at Hull, Leith, and Granton, to the railway stations for conveyance to the various ports of embarkation, where they remain in lodgings till the time comes for them to start on their outward voyage.

Obviously, from first to last, in the course of their transit, a certain amount of personal intercommunication must take place between the transmigrants themselves and others, either at the lodging-houses where, as at Hull, they stop for refreshment on the way from the steamer, or at the railway station, or it may be *en route* by train ; their travelling or not with other passengers depending upon whether they have a special train allotted to them or not. In any case, the casual intermingling that necessarily takes place, calls for mention as a ready means of spreading disease, should such chance to be present among the transmigrants, or those with whom they come in contact.

In concluding, the Board would refer to but one more point in the communication of the Honourable the Minister of Agriculture. He remarks that : "The change in the mode of carrying passengers from sailing vessels to steamships, from long to short passages, has much lessened the danger of focuses being created, a result which has been made strikingly apparent at our quarantines."

Doubtless the remark is true, but it only makes more obvious the necessity there is that the Provincial Board draw attention to the fact that the probability is all the greater that infected persons will become *foci* of infection in *transit* by rail through Ontario, or when arrived at their destination therein, as in some western State or Province.

We have the honour to be,
Your obedient servants,

CHAS. WM. COVERNTON, Chairman.
PETER H. BRYCE, Secretary.

APPENDIX XI.

SPECIAL REPORT ON INSPECTION OF CEMETERIES.

The subjoined reports submitted to and adopted by the Provincial Board, are of importance as illustrating in one or two instances, some of the aspects of the law as affecting the extension and continued use of existing cemeteries within the limits of urban corporations. That the question with the growing age of any cemetery must increase in importance is self-evident, and that the location and management of cemeteries are matters of so great importance as to occupy the serious attention of Local Boards of Health, the subjoined report can leave no room for doubt. The points which were brought out in the St. Mary's report are of much interest, inasmuch as they exhibit in very large measure the class of conditions which in part or whole pertain to cemeteries in most incorporated cities, towns and villages. Regarding the conditions prevailing in most towns and villages, the results of answers in reply to a circular issued by the Board in July, 1884, show most conclusively that hitherto the grave-yards have been most commonly located on sites within present corporations on high and sandy soils, which have been easily drained, or whose natural drainage has been good. At times the presence of a valley at the foot of the higher ground has prevented dangers which naturally would arise from drainage towards wells, while in others this last danger has been an actual one. The filling up of the original burying plots in many old towns has caused the establishment of new grounds, and in such cases there has generally been shown a more or less general regard for the dangers which follow too great proximity to cemeteries. The Act of 1885, clauses of which are herewith published, limits in some degree the possibility of legalized dangers.

I may illustrate the general situation of cemeteries from answers to the circular :—

1. Two cemeteries ; each about half a mile from more thickly-settled portion, and both outside village limits. One at slight elevation above village ; the other considerably below. Soil is sandy in both.

2. About one mile, and at an elevation of about 150 feet higher than the general level of the town. Soil is light-sandy.

3. Two cemeteries in town ; about one mile from its centre ; one has an elevation of twenty-five feet above the town, while the other is rather below the level. Sand and gravel soil.

4. It is situated at north-west corner of the town ; it may be 100 feet above the general position of the town.

5. About one-quarter of a mile from the town, and about twenty feet above the level.

6. One about three-quarters of a mile distant, and at an elevation of fifty feet or more ; one adjoining the village and on the same level. Dry, sandy soil.

7. The Board regrets to say that the entire cemetery is in the town. There are six acres more to be added to it, making it cover a total area of sixteen acres, all within corporation limits. Sandy soil.

8. Two in the corporation, about six feet above the level of street. Both should be closed. Sandy soil.

9. Cemetery in the heart of the village, surrounded on three sides by houses. Slightly elevated. Sandy and gravelly loam.

10. Two grave-yards in the village ; no cemetery. Standing shame.

11. One within corporation, about a quarter of a mile from thickly-populated part of town, on the highest hill in town. Gravel soil.

From these answers it is quite evident that the provisions of the law by which new and permanent burial grounds are to be restricted as regards situation, are of a most necessary character. While the good taste of our urban populations may safely be depended upon for the selection of the pleasantest and most convenient sites for their burial-grounds, it would seem most desirable that Local Boards in exercising their functions should examine carefully into any propositions for the extension of existing or the establishment of new cemeteries. In cases where any doubts may be expressed regarding the expediency or wisdom of the action of Local Boards, their members will see by an examination of the following report on the St. Mary's cemetery what the chief points, are likely to form scientific objections to any proposals which they may make.

The following clauses are from *An Act respecting the Expropriation of Land for Public Cemeteries*, 48 Vic., Chapter 38 :

1. The council of any city, town, township or incorporated village may pass a by-law for the acquiring and expropriation of lands to be used for enlarging any existing public cemetery or burying ground, but no expropriation of any land within the limits of a city shall be authorized, and as to any such enlargement in a village or town the consent of the Provincial Board of Health shall be first obtained.

3. No lands used as an orchard, pleasure ground or garden, nor any lands within two hundred yards of any dwelling-house, shall be expropriated without the consent of the owner or owners of such dwelling-house.

REPORT ON THE INVESTIGATION *Re.* THE ST. MARY'S CEMETERY QUESTION.

To the Chairman and Members of the Provincial Board of Health :—

GENTLEMEN,—The question which has been brought to the notice of this Board regarding the proposed extension or the purchase of new ground for cemetery purposes for the Protestant inhabitants of St. Mary's, has arisen as stated in the evidence taken in my visit to St. Mary's, and also in various correspondence, out of a resolution passed by the Town Council in 1884, in the form of a by-law, adopted as stated in Mayor Sharpe's evidence by a large majority of the Council, which decided that in accordance with the terms of the Act the present cemetery should be closed so far as interments are concerned at the close of 1885.

The report of the Local Board of Health also contains the following clause :—

"We would recommend the closing of the grave-yards at the east end of the town so far as interments are concerned, as they are being rapidly filled up."

It will thus be seen that these resolutions raised a question which had to be discussed by the whole citizens who not only had plots and friends buried therein, but would also be taxed for the purchase of new grounds.

Briefly stated there were three questions before the people :—

1st. Whether the present cemetery was so full that new ground would very soon be needed, and whether the continuance of burials, as long as there was room, would produce any unsanitary conditions affecting the health of citizens living near it.

2nd. Whether, assuming that more ground is needed, it would not be sufficient that part of the adjacent farm land be purchased and new burials be continued there as might be found necessary.

3rd. Whether the sanitary requirements do not demand not only the closing of the present cemetery, but also the purchase of land at some considerable distance from the present cemetery.

Regarding the first question it may be fairly said that while a good number of citizens might doubtless be found, who would be in favour of continuing interments in

the present cemetery, public opinion, as a whole, is in favour of purchasing additional ground for burying purposes. I believe, however, that it is generally felt that under special circumstances, where, it may be, some old man wishes to be laid beside his partner in life, it might well be left to the Cemetery Committee of the Council, or to the Local Board to permit such a burial in the old cemetery.

Referring to the second point, it cannot fairly be denied, as shown by resolutions passed at a public meeting of citizens and at the annual meetings of two large church congregations, that there is a strong party in favour of extending the present cemetery. In all probability this party might be found to be made up of those who simply wish to take a few acres of the adjoining field into the present cemetery, and others who are willing to have a considerable area of contiguous land purchased, but that the part of it used for burial purposes should be so far removed from all dwellings which exist or are likely to be erected, as that no sanitary objections could be raised against it.

The third point, it will be seen, brings those last-mentioned and those desiring a new cemetery entirely beyond the possibility of interments in it becoming at any time a source of danger to the public health, practically in the same category ; and this, it will be seen, reduces the question, as far as they are concerned, down to a question regarding which new site will be the best, viewed from the sanitary standpoints first, and thereafter from those of convenience and cheapness in purchase.

From the evidence taken, and which accompanies this report, from conversations with a number of private citizens, I am of the opinion that this Board may conclude :—

1st. That the bulk of public opinion is in favour of closing the present cemetery, while leaving the authority in the hands of some competent authority to decide regarding individual burials.

2nd. That if land can be purchased in the neighbourhood of the present cemetery, possessing the necessary sanitary requirements, it will, from its enabling people having friends buried, to go, without much inconvenience, from the old to the new burying ground.

The Provincial Board having, by the following resolution adopted unanimously by the Council, determined to send a delegate :

"That the Cemetery Company of the Town Council be instructed to communicate with the Provincial Board of Health, and request the Inspector of the aforesaid body be sent to inspect the grounds lying along side the present cemetery, and to report on its sanitary condition, and ask the Provincial Board's permission to enlarge the existing cemetery,"

I proceeded to St. Mary's on the 8th of May, and made a thorough inspection of the several pieces of land under consideration for cemetery purposes.

The various points enquired into were :—

1. Nature of soil.
2. Amount and direction of the drainage.
3. The outflow of the drainage.
4. Distance from present habitations.
5. Probable advance of town toward proposed sites.
6. Convenience of site to present cemetery, and to the town.
7. Character of the road leading to cemetery.
8. Obstructions to funerals, such as railways.
9. Amount of available land.
10. Its natural beauty.

By reference to the maps accompanying this report you will observe the position of the present cemetery, and the location of the various proposed sites.

The red dots indicate houses.

After a survey of all the dots indicated on the maps you will observe three which really are those which have been thought about by the people. I shall indicate the points connected with each by reference to the map, taking them up in the order visited by me. Regarding these, the objections which may be raised are :

First Proposed Site.—(1) Of the first that it is too near residences which are or may be in existence. To this it may fairly be answered that should the land adjoining the present cemetery be bought, it would extend across an eighty rod lot, so that were the ground beyond the flat springy ground taken for cemetery purposes (and the intervening wet land be drained and fitted up for park purposes as proposed by some), the distance of the new burying-ground would be about a quarter of a mile from any existing building to the east. As the whole property, including the two twenty-acre fields east of the London railway, might be bought, it will be seen that no building in the direction of the cemetery would be possible without it be on cemetery ground. As the population of the town has of late years, rather decreased than increased, it will be readily seen that danger from this source is in both ways practically avoided.

(2) The second objection which may be raised is that the drainage of this ground is by a little creek (dry in the summer), which runs through a small valley in the outskirts, and which for probably 100 yards on the flat as it approaches the river takes its course along a street gutter. There are a number of houses along this little street. I may say that a spring within twenty feet of this gutter and which runs into the creek bubbles up in a small excavation made in the limestone, which in the flat along the river often crops out at the surface. The water from this has long been used for drinking purposes, but as there are several places where the creek runs across small properties, and as at one point a small pond has been created along it for a reservoir in cases of fire, it may be considered that its waters are none of the purest, and that it is hardly possible but that some of its waters percolate into the spring. No history of any evil consequences arising from the drinking of this water could be obtained.

This is used to show that very few houses are along the whole upper course of the creek, and only a small number along the lower part on the flat.

During the season when any possibility of danger exists from soakage into the wells of subsoil cemetery waters, the creek is dried up, unless where there may be a spring along its course. Moreover, its course being in the lowest part of the valley, contamination of wells by it could only be for about one hundred yards, and in this distance any good well must be a bored well, and therefore hardly possible of contamination.

Second Proposed Site.—The objections regarding it are :

1. That it is at a considerable distance away from the present cemetery, and considerably back from the frequented road, and removed from observation by a large wood.
2. That it is on the height above and a declivity within about 150 yards from a creek which runs directly into Trout Creek, which passes through the town, and whose waters are dammed for mill purposes. Contamination of these waters can hardly fail to take place, but as in the other case, this creek goes dry in summer.
3. Its soil is the finest of that of any of the proposed sites, and the natural drainage extremely good.

Third Proposed Site.—Of the third plot that is up the river about two miles from the centre of the town it may be objected :

1. That it is about three miles distant from the present cemetery, along a rather bleak road in winter on the river bank.
2. That all funerals would have to pass under a railroad bridge on the main Grand Trunk line.
3. That the site while commanding a pretty view of the river, would be very cold in winter, being exposed to the wind sweeping down the river valley. The land where it is proposed to bury, is sandy gravel, and at sufficient height above the river to be free from floods in spring and fall.
4. It lies quite close to the river, and hence drainage would be directly to the river, which passes through the main part of the town some two miles below.

This property had already been purchased some three years ago by a company with a view to having it for a burial ground, and it will be readily understood that those interested naturally wish to have it purchased by the town. As will appear in the evidence taken, there seemed some ground for supposing that the action taken in this cemetery matter in the Council was, in some degree, owing to some of the interested

parties being in the Council. It will readily be understood also, that the opponents of these either from political or other reasons have not failed to make use of the facts stated in order to get up the anti-party.

Lot 16 (on map) while mentioned as a possible site, drains into Trout Creek, close above the town, and does not seem to have been thought of by any party favourably.

Owing to my unlooked-for absence from the meeting of the Board when this report was presented, I shall here add one or two explanations intended to be made verbally :

The proposed site, near present cemetery, barring any force which may be in the objections I have stated, has a pleasant gravelly loam as soil ; it has a gentle slope draining naturally toward the creek already mentioned, is high and very pleasantly situated, and as will be seen, very convenient to the town. Clause 3 in Expropriation Act, 1885, will prevent those using it, should it be purchased, from burying within 200 yards of existing dwellings. The drainage is wholly away from the dotted dwellings on the map, and directly down the creek running through the outskirts, with very few houses at all near it, except as already stated. Barring parties interested elsewhere, I think this property, if the Board should approve of it, would be acceptable to the people generally.

Lot two, excepting in the matter of drainage, and its rather out of the way position, is a beautiful spot.

Lot three, were the other sites from any reason not obtainable, would, though at an inconvenient distance, and with a drainage into the river, make, I think, a good burial ground.

All of which is respectfully submitted.

PETER H. BRYCE.

St. Mary's, May 8th, 1885.

Mr. Sharpe, Mayor, stated, that last year a resolution of the Council was passed, closing the present cemetery at the close of 1885, as decided by the Act, by by-law, and by a large majority of the Council. Afterwards the Local Board, on sanitary grounds, approved of the action taken by the Council, in the following words contained in its annual report: "We would recommend the closing up of the graveyards at the east end of the town, so far as interments are concerned, as they are being rapidly filled up."

Further, Mr. Sharpe stated that, at last municipal election, this question was made an important question. One gentleman, of West Ward, supporting the closing, was elected. In South Ward, two gentlemen favouring this action were elected—one was not. One of the prime movers objecting to the closing was defeated. In North Ward, two members of the old Council favouring the closing were elected. The third candidate was a new man.

One serious objection to extending it, in his (Mr. Sharpe's) opinion, to contiguous ground, is that a stream receives its source there. The people of the locality generally are opposed to the present cemetery being continued.

Mr. Wilson, member of the Council for North Ward, and residing in South Ward, in connection with the resolution of last year's Council, stated that it was passed believing that something definite would be done toward procuring a new cemetery. A public meeting was held, at which strong resolutions were passed, asking the Council to repeal that by-law: and although the meeting was duly advertised, presided over by the acting Mayor, and some sixty persons present, yet not more than three or four voted against the resolution. Those parties that did object that in the event of nothing being done, hoped that the by-law might be repealed toward the close of 1885. [Mr. Crabbe here interpolated that he thought that persons in favour of Council's resolution stopped away.] Mr. Wilson said that the matter was brought up during the election campaign, and those gentlemen of the Council who were returned were strongly charged with wishing to put certain property they were presumably interested in on the town. They denied this, and stated that they were willing that the people's wish should rule regarding selection of site. This statement of theirs largely did away with this being a test question.

In relation to Councillors elected in West Ward for present year, two of them are greatly in favour of enlarging the present cemetery. The third was not elected on that question. In North Ward, two of the gentlemen elected are in favour of extending existing cemetery. One of the prime movers objecting to the closing movement was not defeated on this ground, but for political reasons. For South Ward, one of the members elected is in favour of extending present cemetery, should it be the wish of the people. The opinion of the people in the neighbourhood was obtained regarding the matter, and it was ascertained that some were for and some against the closing movement. Regarding the opinion of the people generally, he thinks that they are largely in favour of extending present cemetery; also, that two of the leading congregations, at their annual meeting, passed strong resolutions, practically unanimously, against action of Council, holding that the best interests of the community would be served by enlarging present cemetery.

Mr. Myers, a member of the Council, said he was in favour of closing present cemetery, and in favour of getting land, if practicable, at a greater distance from habitations than the simple extension of the present cemetery would be. Does not think the public meeting a representative one, owing to the apathy of the people. It was properly advertised, however.

The following are the resolutions adopted by the meeting of ratepayers referred to:—

Town Hall, St. Mary's, February 20th, 1885.

At a public meeting of the ratepayers of the town, called by the Mayor at the request of a large number of said ratepayers, held on above date for the purpose of discussing the cemetery question, the following resolutions were adopted:—On motion, Dr. J. H. Mathieson was chosen chairman of the meeting, and T. D. Stanley as secretary.

1. Moved by H. E. Wilson, seconded by Dr. Swanson, That a Committee of citizens be appointed to act in conjunction with the Cemetery Committee in selecting various sites which may be deemed suitable for a cemetery, together with the scheme for enlarging the present cemetery, and report to the Council the price and location—also adaptability; and that a by-law be submitted by the Council to the people, to raise money for cemetery purposes. That the Council be respectfully requested to take a vote of the people at the same time and place on the various sites, together with the scheme for enlarging the present cemetery.—Carried.

2. Moved by J. S. McIntyre, seconded by Dr. McCullough, That the following gentlemen be a Committee to proceed to Toronto to interview the Government, and, if necessary, the Provincial Board of Health, to ascertain the practicability of enlarging the present cemetery, viz.: Messrs. W. E. Harding, H. E. Wilson, James W. Wilson, K. Swanson, Wm. Kennedy, and Dr. McCullough.—Carried.

3. Moved by Dr. McCullough, seconded by G. Spearin, That the following gentlemen be appointed a Committee to act in conjunction with the Committee of Councillors to select suitable places for a cemetery, viz.: G. McIntyre, D. S. Rupert, Wm. Kennedy, S. H. Mitchell, and C. S. Ramsey.—Carried.

4. Moved by E. W. Harding, seconded by R. Headley, That this meeting respectfully request the Council for the present year to pass a by-law repealing the by-law closing our cemetery, and deferring action for one year longer, or until some proper provision is made for the interment of our dead.—Carried. Moved in amendment by J. W. Pool, seconded by Dr. Sinclair, That the consideration of the above question be deferred till December next.—Lost. The meeting thereafter adjourned.

Mr. White, a member of the Council for West Ward, said: The feeling in his ward was strongly in favour of extending the present cemetery, and this was the opinion of another Councillor for West Ward with whom he (the speaker) agreed. The third member was against extension, but his election did not depend on this point. Does not think that Mr. Watson's defeat in South Ward was due to his being against the resolution of the Council. He thinks that his (West) Ward would be in a large majority in favour of extension. Does not believe that Mr. Wilson's defeat for Mayor turned on this question. Mr. Guest, Councillor for South Ward, said, that he thought extension desirable if people wished it, and said so at a public meeting held during the election campaign. Does not

think that Mr. Wilson was defeated on the ground of his being opposed to the Council in this matter. He thought that the old Council was premature in closing the old burying-ground before a new one was selected, and thinks that this is the opinion of the people in South Ward. Mr. Harrison, member of Local Board of Health, said, He was personally in favour of having the present cemetery extended, but the will of the people should rule. The Board last year were divided in their opinion regarding the action of the Council, and he objected to the report of the Board in reference to this question. Mr. Box, member of Board of Health, said, That he had been a resident for thirty years, and never knew a case of sickness attributed to the cemetery. Is entirely in favour of extending present grounds; never saw or heard of a report of the Local Board for last year approving of closing cemetery, and would have opposed it had he been present. Has been Mayor several years. Is greatly attached to this cemetery for this reason:—When a little boy, he went to Montreal, where he contracted small-pox, and when he returned, his mother took the disease, of which she died, and was buried there. He would like to be buried by his mother's side, but would not like to see her removed from her present resting-place for fear of the disease. He thinks two-thirds of the people are in favour of having the present grounds extended.

[Mr. Crabbe, member of the Board, said: Regarding Mr. Wilson's election in South Ward, he (Mr. Wilson) is head and front of the opposition to a new cemetery in the matter of location, and thinks he was defeated on those grounds. Is in favour of a new cemetery, although friends of his hold same opinion as Mr. Box. The Board of Health meeting was called in the usual way, and the resolution regarding the cemetery was passed, signed and submitted to the Council. The reason the public meeting was not attended by more persons favouring new cemetery was, that the Council had a Cemetery Committee, and a Committee of citizens was appointed, at a meeting of respectable citizens called by postal card, to act in conjunction with the Committee of Council. About seventy of these cards were issued, and some twenty-five persons attended the meeting. The representatives of West Ward are not in favour of new cemetery, largely because they would not be exposed to any possible effects of present cemetery. Resides within two blocks of cemetery, and thinks that nine-tenths of the people in that locality are not in favour of having it extended—the reason of this being that it is stated that the water is injured.

[Mr. Wilson here interpolated that the people would be willing to buy all between the cemetery and such position.]

Drs. Mathieson and Sinclair wish burials stopped, because cemetery is small, and is now practically filled; while Dr. McCullough thinks that extension of the cemetery is desirable.

At the last meeting of the Council, held on the 18th April, it was moved by Councillor Wilson, seconded by Councillor Guest, That the Cemetery Committee of the Town Council be instructed to communicate with the Provincial Board of Health, and request that the Inspector of the aforesaid body be sent to inspect the grounds lying along side the present cemetery, and to report on its sanitary condition, and ask the Provincial Board of Hea'th's permission to enlarge the existing cemetery.

The Mayor was requested to send a map of the proposed site to this Board.

APPENDIX XII.

EPITOME OF REPORTS OF LOCAL BOARD.

In the Report for 1884, the synopsis of all the reports received from Local Boards during the year, sent me soon enough for publication were included. It was thought by the Provincial Board a most proper thing that the successful working of the Public Health Act of that year should be known, and that there could be no better way of exhibiting to a Local Board the work of other Local Boards than by a publication of the work done during the year. The advance in work seen on all hands during 1885, is an evidence that Local Boards were stimulated to increased action, and, as will be seen in the selected reports herewith published, the amount of work, and the methods of doing it, have in many instances, been of a character so thorough and satisfactory, as to commend them to the careful perusal of other Local Boards. Remarks upon the work done by some Local Boards have already been made in the report of the Secretary to the Board, and would not seem to require in this place any further reference than to say that only a few of many good reports have been selected as seeming to be most illustrative of the present status of health work in some of the most progressive of our municipalities in Ontario.

P. H. BRYCE.

CITIES.

BELLEVILLE.

Medical Health Officer's Report.

As Medical Health Officer for the City of Belleville, I beg to report as follows:—

During the year an inspection of the city was made for the purpose of ascertaining its sanitary condition.

The number of water-closets emptied and disinfected by my order was 146. Yards inspected and ordered to be cleansed fifty-three. Other nuisances to be abated, namely: drains cleaned, manure removed, slaughter-houses and pig-pens cleansed, and other nuisances abated, in all forty-three.

The wells of the city were all looked after and cleansed. I found a general desire on the part of the citizens to assist me in the discharge of my duties.

The flood in the spring had a good effect in cleaning off from the river bank the unsightly string of water-closets from the Upper bridge to the Harbour.

I would again strongly urge the City Council to pass a by-law, making it compulsory to do away with the Pit system, and adopt the Dry Earth system for water-closets.

The water supply of the city is not what it should be, and as the population increases and the citizens have to depend on the wells sunk on their own premises, no drainage being provided by the city authorities, it follows that though we have escaped this year any serious epidemic, we owe it more to the natural situation of the city than to any sanitary precautions taken by our city authorities.

The mortality of the city for the past year has been lower than for some years past.

I took the precaution on the outbreak of small-pox at Brockville to notify the officials of the Grank Trunk that all trainmen and officials running between Brockville and

Belleville should be vaccinated, which was done. I also inspected the steamer "Alexandria" regularly, and saw that the hands were all protected by vaccination.

Although the City Council did not think it advisable to act on the recommendation of the Board, as advised by me, I hope that future Councils will not take the same stand, but will act on the advice of men whom they appoint to look after the health of the city, and who have only the interests of the citizens at heart.

R. TRACY,
Medical Health Officer.

BRANTFORD.

I have the honour to submit my second annual report, under the provisions of the "Public Health Act, 1884."

The general health of the city, during the greater part of the year, has continued to be unusually good. No epidemics have prevailed to any considerable extent. The number of deaths registered, up to November 11th, is 149. Allowing the remainder of the year at the same rate, the number for 1885 would be 167, making a death rate, on a population of 12,136, of fourteen per thousand.

The work of sanitary inspection has gone steadily on. A large number of yards and closets have beeen examined by the Inspector, and many small nuisances abated. Pigstys have been practically abolished, only a few isolated ones remaining, their owners preferring to abandon them rather than submit to the requirements of the Sanitary Inspector. As to slaughter-houses, three outside of, but close to, the city limits, which were complained of, have been (owing to proceedings taken by the Township Board) discontinued. Within the city limits, the only one remaining has been carefully watched and kept as clean as possible.

For promoting the cleanliness and health of the city, as well as for the great convenience and comfort of all, one of the most urgent needs at present is an efficient means for the frequent removal of garbage. The almost unavoidable presence of decaying vegetable and animal refuse in private yards is very unwholesome and offensive. It is important that the Board should give its attention to this matter as soon as possible.

The systematic efforts of the Board to introduce the dry earth, or ash system, has been attended with great success. Last year I reported that a good beginning had been made—57 ash closets having been established. There are now about 220 in use. Last spring a large number of bills were circulated, urging the matter upon builders and others. A half-size model of the Brantford Closet, a very cheap and convenient form, was made and placed on exhibition; also a sample of the Mohawk Ash Commode, and several samples of patent earth-closets.

At the Kings Ward and East Ward Schools, the cess-pits have, this summer, been abolished, and excellent dry ash closets been substituted. Those established in the North Ward School last year have given complete satisfaction. Since my last report, public dry ash closets have been constructed at the Market buildings, and a urinal with brick cistern reservoir. At the County Gaol and Court House, the system was established last year, and has proved, with eighteen months experience, a complete success. On the whole, I think there are good grounds to persevere in this matter.

Since my last report, the John H. Stratford Hospital has gone into successful operation. Already this hospital has been the means of saving a number of lives, which, without it, would almost certainly have been lost. In a city of this size, many accidents will occur, and many cases of dangerous disease, which may be successfully treated in a hospital, but which, without it, would have small chance of recovery.

In view of the possible occurrence of small-pox, the Small-Pox Hospital has been placed under the control of the Board of Governors of the John H. Stratford Hospital, and they have taken care to have it made ready for immediate use, if required.

During the past month a very large number of persons have been vaccinated. The arrangements made by the Board, for securing the vaccination of children attending the public schools, have been entirely successful. As very little vaccination had been done in Brant-

ford during the last seven years, it was found that over 750 children—more than one-half of those attending the public schools—had never been vaccinated. All of them now, with the exception of about a dozen, have been vaccinated during the past four weeks. It is pleasing to be able to say that only in the case of one family has there been a refusal to submit to vaccination. I am informed that the children of this family are at present, under the regulations of the School Board, excluded from attending school. A considerable number have applied for *free* vaccination, which has been furnished by this Board, the various physicians in the city having vaccinated such persons at twenty cents each, the Board furnishing a sufficient supply of fresh bovine virus. The accounts show that 643 persons have been vaccinated at a cost of $128.60, exclusive of the cost of vaccine.

It is important that the work of vaccination should go on. The number of children under the age of five years is estimated by one of the assessors to be 1150. Of these a large percentage yet remain who have never been vaccinated. As to adults, there are probably not a great number who have never been vaccinated; but there are a large number who might with propriety be vaccinated. I commend this matter to the consideration of the Board.

In the absence of any serious epidemic of disease, it is difficult to enlist the sympathies of the public in sanitary work; in many cases it is difficult to overcome opposition, but in view of the vital importance of the matter, I hope that the Board will not relax its interest in sanitary work, and that it will be supported in its future efforts to make Brantford a clean and healthy city.

I regret that, owing to my time being otherwise entirely occupied, I have found it necessary to resign the position of Medical Health Officer. I shall, however, always continue to take a deep interest in the work of the Brantford Board of Health. I have to thank the Chairman and members of the Board, and especially Mr. Woodyatt, the Secretary, for their cordial support and assistance in the various matters with which I have had to deal.

WILLIAM T. HARRIS, M. D.,
Medical Health Officer.

GUELPH.

Chairman's Report.

I herewith respectively submit the second annual report, in accordance with the by-law on Public Health. I might state that the general work of the department far exceeds that of any preceding year both in amount and variety. The ordinary routine of duties has been performed with as much success as could reasonably be expected, while special investigations of much interest have been undertaken, having for their object the examination of the sanitary conditions of houses, yards, etc. The report of the Sanitary Inspector covering these investigations will be laid before you. I am glad to say that our death-rate continues low when compared with that of other cities of about the same population. It is a matter for thankfulness that during the past year the city has not been visited with any wide-spread cause of mortality or sickness, beyond the ordinary cases which we have almost every year.

I would most respectively call the attention of the Board to paragraph 10, schedule A, of the Health by-law, relating to the inspection of cow-byres, as there are some places which I do not consider that certificates should be granted to.

It is here worthy of remark that the impetus given to sanitary reforms by the new law coming into force, has been very marked in our city; it has caused the removal of a large number of old standing nuisances, and a general cleaning up. There has been a larger number of yards and closets cleaned this year than in any previous year.

During the past year I authorized the contagious disease Hospital to be put in thorough order, and made ready for use at any moment. Two wards have been properly equipped with beds and furniture, and everything that is necessary for a sick room; nurses, both male and female, have been obtained in case of necessity.

Although no measures have been taken to make vaccination compulsory, yet I am glad to be able to state that most of our citizens have had themselves and their children vaccinated. I gave orders to the Health Inspector to supply all poor people who were unable to pay for their children being vaccinated with a certificate to a medical gentleman, to be charged against the city.

The Board has had eight meetings during the past year, and the attendance of the members I am glad to say has been very satisfactory. At the meeting of the Board on the 5th of last month, which was called for the purpose of enquiring into the case of supposed small-pox on Oxford Street, it was decided that Drs. Brock and McKinnon be requested to make another examination of the case, and report to the chairman, which they did, and on the morning of the 6th I received the following letter:—

GUELPH, October 5th, 1885.

To His Worship the Mayor, Chairman of the Board of Health:

SIR,—Having been requested by your Board to visit the case of reported small-pox, we desire to state that the lady in question having been absent from home for some time, and returning with an eruption having the appearance of a modified form of small-pox. We thought it best for the protection of the public to have such measures taken for a few days as would prevent the spread of the disease. We are now satisfied from the appearance of the eruption that it is not necessary any longer to continue such measures.

L. BROCK, M.D.
A. McKINNON.
H. HOWITT.

During the past year Dr. Thomas Keating was appointed by the Council Medical Health Officer of the city.

In conclusion I am happy to be able to state that the sanitary condition of the city is good. All of which is most respectfully submitted.

WM. STEVENSON,
Mayor,
and Chairman of the Board of Health.

HAMILTON.

Medical Health Officer's Report.

I beg to present this my second annual report. Last year you received a partial return of the sanitary inspection which was commenced during the preceding summer; only one ward, with parts of others, were then completed. I now give a statement of the whole, and also the results which have been achieved, so far:

The full number of premises inspected is 9265; of these 8300 were occupied as dwellings, many of them serving the double purpose of dwelling and place of business; 2412 were reported unsanitary from want of cleanliness, partly due to negligence and want of proper accommodation. The cellars received particular notice, those inspected numbering 7106; of these 1274 were reported unsanitary, due to accumulations of dirt, refuse, decomposing vegetable and other matter, also from being used as a place of rendezvous for hens and chickens, want of proper ventilation, escape of sewer gas, from defective plumbing, and from dampness of various kinds and degrees, caused by disordered water-taps, escape of sewage from badly connected waste-pipes, soakage from close proximity to privy-vaults, and flooding from the streets after rain or thaws. 2665 dwellings had sewer connection. These connections, as reported by your Sanitary Inspector, were in too many instances made with regard to economy only. Untrapped kitchen sinks and baths number 395. In

many cases the waste-pipe was conveyed to the pan of the water-closet, or into the waste-pipe of the latter, in other cases connected with cess-pools or privy-vaults. There were 1662 water-closets, 43 of which were reported to be in bad working order, and 14 deficient in water flush, some of them having the water cut off on the plea of economy. A few of those closets were connected with old wells and cess-pools.

Privies, to which I will allude again more particularly, number 7792. The condition of each vault was specially noted at the time of inspection. 1879 were reported to be in foul condition, and 137 connected with sewers, which is far short of the number, but impossible for an Inspector to tell; 135 of those so connected were deficient in water flush. Earth privies at the commencement of the inspection were very few, and properly attended to. Cess-pools noted were 590; those receptacles vary in dimensions, from a barrel sunk in the ground to ones of more capacious and substantial character. A large number of open pits were utilized for the same purpose. All those contrivances were more or less offensive, and anything but health restorative. Surface drains were legion, many of them conveying wash-water, etc., to the streets, which frequently accumulated into stagnant pools. Underground drains to the number of 106 were reported foul; in some cases they conveyed waste-water and even *excreta* to the neighbouring gullies, rendering the atmosphere delightfully odoriferous!

The water consumed for domestic purposes is chiefly supplied from the city Water Works, yet a good many wells are still in use, in some cases owing to the water main not being available to connect with, while others can conveniently do so, but adhere to the wells in order to save the expense of introducing it. In some cases the water is apparently good, while in most instances, it was constantly complained of. 503 wells are reported, and in 274 the water is used for domestic and other purposes, one well frequently supplying several families. 95 have been converted into cess-pools, and 134 are old wells dried up. I have examined some newly built wells, in which the water seems more like surface water than that derived from a spring.

Animals reported were 1158 horses, 520 cows, 62 goats, 178 pigs, which latter were, with a very few exceptions, illegally kept; the owners were notified to that effect. The number of horses given is short of the real number. I believe an accurate account is difficult to get for fear of taxation. It would be well for people to understand that the health officers have nothing to do with taxes, and any information given to them refers to sanitary matters only.

Complaints were occasionally made about cow-byres; none of them are very desirable neighbours, and less populous districts are more suitable locations for them; none are perfection either in structure or care. As far as I have had opportunity of observation, the cattle in the city are as well housed and cared for, with perhaps one or two exceptions, as those in the country; and the latter supplying milk to the city should be placed on equal surveillance, and licensed to sell milk in the city.

Since the inspection commenced, 233 sinks have been legally trapped, and eleven disconnected from cess-pools and privy-vaults. New sewer connections number thirty-nine, and fifty-eight old connections were repaired and otherwise rectified. New water-closets introduced were seventeen, and forty-seven repaired. Eighty-seven privy-vaults were abolished, including those illegally established; 1491 were cleaned out by Mr. Freith, and probably 200 more by Mr. Simmonds, from whom I can get no report. Earth-privies established number 159, of these 132 were reported as properly attended to. 115 wells were abolished, some being completely filled in, while others are undergoing that process. Bad cess-pools removed were twenty-one, and a large number of open pits were cleaned out and filled, some of which were replaced by new ones in accordance to regulations of the by-law. Fifty-two bad drains have been satisfactorily attended to, and four bad cisterns removed from under the kitchen floor. Nine cellars have been properly drained, and in seventeen cases city water has been introduced. The cellars and premises have been almost without exception, thoroughly cleaned out, and the steady cleanliness of the latter has been mainly due to the wholesome advice of the Sanitary Inspector, and the introduction of the scavenger system. Occasionally dirty premises are met with, discreditable to the owners, who should know better, and give a good example to others. Although 9265 house to house inspections have been primarily made, it has taken probably

as many more subsequent visits to get done what has been recorded above. It is pleasing, however, to observe that an increased impetus has been given towards achieving good results, although much time has been spent in endeavours to effect it owing to the fact that our object has been to get unsanitary conditions rectified by moral suasion, rather than by having recourse to legal proceedings; it has been only in obstinate cases that the latter was had recourse to. Now that people have been pretty well educated as to what is expected from them, more speedy attention to notifications will be required.

It has been observed that the health laws were not intended to be cast iron rules. I can only say in reply, that if we are to expect permanent good results from sanitary rules, they must be carried out in their entirety—no half measures will suffice; and it would be advisable to leave those matters to the discretion of the executive officers of your Board, as ward influences cannot be other than obstructive.

A petition having been referred to your Board for consideration, having for its object the further introduction of privy-vaults, I deem it necessary to give reasons why such petition should not be granted—in the first place, all sanitarians are opposed to their existence, and secondly, the inspection has verified the reasonableness of their objections by pointing out how those pernicious receptacles baffle the promotion of sanitary reform.

DILTS

In thinly scattered districts, privy-pits may be tolerated when properly constructed, but in populous places like our own city, the frequent removal of *excreta* is a *sine qua non* as regards a healthful atmosphere. A frequent complaint made last year was that, during the summer months, it was impossible to keep the windows open in the evening, or even to sit at the hall door and enjoy the cool of the evening, owing to the air being so tainted with excrementitious perfume. Numbers of vaults, cleaned out six months ago, are again teeming with offensive matter. Many of those vaults are used as cess-pools, having kitchen sinks and baths connected, and also the water-spouts from the roofs of houses, with what effect? that of keeping up an almost constant agitation of the putrid mass. True, many of those vaults have sewer connection, but the insufficient flush does not remove the contents: the sewer gets blocked. Where the flush is sufficient, the sewer probably is kept clear, and there being no trap the sewer gas has a free exit; so that between the two extremes the air is kept in a state of anti-purity. Again, their structure being generally based on economic principles they speedily become offensive; frequently two or more closets are placed over one common vault; each closet belongs to a different tenant; the vault in time becomes offensive, perhaps to overflowing; it has to be cleaned out: one tenant wishes to have it done, and is willing to pay his share towards that object; the others refuse to pay; neither will the landlord if he can help it; one part of the vault cannot be cleaned without doing the whole; time is lost, perhaps litigation ensues. This has been of too frequent occurrence. Your Board will have to take into consideration that the health laws embrace the whole Province, and that our adjoining municipalities have to be alive to their own sanitary interests.

I would here remark that the health by-law provides that all privy-vaults shall be cleaned out between the 15th day of November and the 15th day of May, and that between those dates they shall be regularly disinfected; the interpretation of this rule seemed to me very explicit, "that no vaults should be cleaned between the 15th of May and 15th of November," and such I believe was the spirit of the rule in intention, but the legal interpretation of your city solicitors negatived that idea. The Township of Barton, however, has a construction of its own, and will not allow night soil to be deposited within its boundaries during the summer months; it will therefore be necessary for your Board to provide for the disposal of *excreta* during those months. I am myself opposed to the opening of those vaults and removal of contents during hot weather. With between seven and eight thousand privy-vaults now in existence, it would be almost impossible to have all the soil removed during the winter months. Last year permits were granted for the cleaning of privy-pits from three-fourths full and upwards, owing to the obstruction given to their cleaning, and the number to be cleaned. In order to facilitate the work, it was done by streets as much as possible.

The earth-privies introduced are for the most part of rude construction, and admirably contrived so as to render them as obnoxious as possible; nevertheless neither your Sani-

tary Inspector, nor myself, have met any which can compete with privy-pits in offensiveness, nor were any so offensive that the odour could not be quickly removed. At present the boxes can be cleaned out monthly at fifteen cents per month, paid at the time of cleaning. This sum is seventy cents less than the smallest amount can be removed from a privy-vault. If your Board are agreeable to make better terms for the removal of their contents, I think that these closets can be removed weekly free of cost to either landlord or tenant, provided that they are properly attended to as required by by-law.

To all parties building, I would recommend the earth-closet system, and as I have no money interest in their sale, I have no hesitation in recommending Heap's Patent Earth-Closet, with urine separator. I think that good ones can be had at very little over what it would cost to to build a privy; of course those having good sewer connection can have water-closets of the best kind safely introduced.

I would suggest to your Board the advantage to be derived from a more equitable scale of charges for the removal of night soil, so that one yard of soil could be removed at less cost than two yards are removed at present.

With the exception of zymotic diseases, the city has been otherwise very healthy. No better illustration can be given than the small incomes of medical men, which has been so unjustly remarked upon. The total number of zymotic diseases reported is 333, namely: diphtheria, 193; scarlet fever, 27; typhoid fever, 49; whooping-cough, 46; measles, 8; small-pox, 10. With the exception of whooping cough, I believe that all were fairly reported. I would here remark that placards have been posted as quickly as possible after notification of diphtheria and scarlatina, but that delays in removing the cards have been the result of intention, not of neglect; in many cases it was found that cards were removed too early, and had to be posted up again.

Your Board may be congratulated on having passed through the tempestuous ordeal of selecting a site for small-pox hospital. No better site could be selected; it is sufficiently isolated and easy of access. The danger to the patients from bay miasma is very remote. There are, however, stagnant pools between Catherine Street and Ferguson Avenue which will require attention. There is also a very offensive establishment on the lower end of John Street, of which frequent complaints are made, and probably as dangerous to the public health as other matters complained of. Although an hospital has to be erected, *it is not expected that it will have much use;* its object is to prevent the spread of an epidemic, as well as to have a place in which to treat any cases which may spring up, as has already occurred,—for an epidemic the proposed hospital would be of small proportions. The city, I believe, is now pretty well vaccinated, at least the younger portion of it. It seems to me to be a great slur upon the morality of a people that humanized virus cannot be more extensively employed. I much prefer the latter to any vaccine, and cannot see why sufficiently pure cannot be obtained. The danger of inoculating diseases through vaccination does not appear to me to be so frequent as imagined. My own experience is that, no matter how pure the virus is, if the blood of the vaccinated person is impure, that impurity is almost sure to show itself. If bovine virus is to be the standard virus to be employed, it would certainly be advisable that a vaccine farm should be established in the Province, and under the control of the Provincial Board of Health.

I wish to bring to your recollection that no official reason has been given to your Board, why your recommendation regarding the Symmington intercepting-plan was not carried into effect.

I desire to bring to your notice the condition of the offices in which your officers are located. They are altogether unsuitable, being badly lighted, badly ventilated, and badly heated. During last winter the office was heated with impure air; its source could not be otherwise. Nearly every morning the air was offensive; the medical office has been so dark, especially when the outer door has to be closed, that there is not sufficient light; even lately I have had to send away persons unvaccinated from want of light to perform so simple an operation. The office is too confined and not private enough, and I earnestly request that you will provide your officers with suitable and healthy accommodation. I have no hesitation in saying that the whole building is unhealthy, and quite unsuitable for the magnitude of the work carried on; it is also becoming dangerous, even the new tower

has a crack in its walls. It would not astonish me if the front wall of the building fell in some day, causing loss of life.

I intended to have given a short statement of the inspection by wards, but press of work has prevented me just now. It is pleasing to find that the city is progressing in buildings and population; the latter, as given by Mr. Peacock, is as follows: Ward 1, 3,766; Ward 2, 4,200; Ward 3, 6,087; Ward 4, 6,357; Ward 5, 6,262; Ward 6, 6,598; Ward 7, 6,935.

In conclusion, I have great pleasure in stating that the officers selected specially to carry out my instructions, have performed their respective duties to my entire satisfaction. Inspector Ford has kept a daily statement of all his work. Mr. Peacock's books of inspection show what he has done. I would recommend that he shall be regularly appointed as Health Officer; it would save unnecessary delays, and increase his efficiency. He now well understands the geography and sanitary details of premises. With both these officers I can get through a good deal of work. I am also pleased to mention that the other officers of your Board have always been obliging and attentive when their services were required.

J. RYALL.
Medical Health Officer.

KINGSTON.

Medical Health Officer's Report.

I have the honour of submitting the annual report upon the sanitary condition of the City of Kingston, in accordance with the provisions of the Public Health Act.

I have endeavoured, while dealing with the many important sanitary questions, which have been brought under my notice in the short time that has been at my disposal, to bring the provisions of the Public Health Act relating thereto into operation, thereby limiting the progress of disease, by removing or abating those unhealthy conditions which are a standing invitation to outside epidemics.

It is unquestionable that a large proportion of disease is due to conditions arising from ignorance of the laws of life, or carelessness of their effects, whereas, by proper attention to the laws which govern health, and close attention to surrounding conditions, many diseases may be prevented, or, at least, greatly ameliorated.

Strict cleanliness is a great precautionary measure, and this requires to be constant and thorough to be effectual.

With this object in view we have, during the early springtime, kept a strict watch over any nuisance deposits being thrown on the ice in the harbour, thereby polluting the water, and endangering the public; and I further hope that during the present season we may be able to stop it altogether.

Later on in the season, with the assistance of the Sanitary Inspector and police, we caused a thorough inspection of yards, privy-pits, cess-pools, lanes and alleyways to be made, requiring those who had neglected to clean their premises, to comply with the provisions of the Public Health Act.

Through the influence of the Honourable George A. Kirkpatrick, and his Worship the Mayor, the Honourable Minister of Public Works granted us the use of the Government dredge for the purpose of dredging out the harbour in front of Queen's wharf and Barrack St. slip, which was very much needed. Also, upon due representation, Messrs. Gaskin, Kerr, James Richardson & Son, and James Swift, had the harbour dredged adjoining their properties, not only in the interest of themselves, but also as a great public benefit in draining away large deposits of filth from the mouths of the several drains emptying into the harbour.

I further recommended an examination of all cellars, which was in a measure carried out, but, in my opinion, should be fully, in the interest of health sanitation.

I also made arrangements for the daily removal, when required, of all kitchen refuse, offal, filth and garbage of every description, for the small sum of ten cents per barrel, and

when the amount was less than a barrel, to call for it every day for ten cents per week, offering to all a special inducement for cleanliness, and a ready means to dispose of their refuse, which is a source of great annoyance to many, and danger to the health of all.

During the greater part of the summer, the residents living in block A, suffered very much from stagnant water in the cellars, through bad drainage, causing a vitiated and unpleasant effluvium to escape into their dwellings, so much so, as to become unbearable, and also dangerous to the health of the community. I brought it under the notice of the Local Board of Health; the Board gave instructions to have the drain cleansed, which I proceeded to do. I had it thoroughly cleaned out. The connections with privy-pits (where practicable) corrected so as to prevent the solid matter from the pits entering the drain, which there is no doubt, was largely the cause of the present difficulty.

In respect of drainage, it is now in better condition than it has been for many years. The funds to defray the expense in connection with this work, was contributed by the persons interested.

The Local Board of Health, in one instance, compelled the occupants of a property, who had a building placed over a disused privy-pit, without taking the proper sanitary precaution before so doing, to build a division wall, and disinfect and fill up, as required by the Public Health Act. Hereafter no buildings will be allowed to be built over, and upon, any privy-pit that has not been properly cleansed out, disinfected, and filled up, as required by the said Act.

During the past season we have suffered from an epidemic of scarlet fever, from which we are still suffering, but not to such an extent as we did some time ago. We cannot give any special reason for the prevalence of the fever, as it is not confined to any particular locality or class of persons, but has spread all over the city, and among all classes. The disease generally has not been of a malignant kind, as the deaths have not been very numerous.

On its outbreak, the Local Board of Health took all the necessary precautionary measures to keep the public schools free from the attendance of any children from houses infected with it. With that object in view, reports have been required from the medical men of all scarlet fever patients under their care and treatment, and the school authorities have been notified from time to time of these cases. Everything was done by the Board that was possible to be done.

In reference to the scourge of small-pox, which has appeared to such an alarming extent in the City of Montreal and other places not far distant from our city, not a single case of that dire malady has, as yet, appeared within our midst.

You are already aware from the statements in the press, of the large number who have undergone the operation of vaccination. The citizens generally have responded to the request of the authorities, in coming forward to be vaccinated, so as to fulfil the requirement of the Statute. In only two cases have I had to threaten them with the dignity of the law for nonfulfilment of the same.

Before closing, I would refer to the conditions of our streets. I think they should be scraped oftener than they have been. There is too much mud left to dry and form dust, composed of decayed vegetable and animal filth, which, when dry weather, and high winds come, is all blown about our streets, and into the houses, to be inhaled by the occupants, and is thereby a prolific cause of many diseases.

SAMUEL H. FEE,
Medical Health Officer.

LONDON.

Medical Health Officer's Report.

I have the honour to submit the following report of the sanitary condition of the City of London, in accordance with the requirements of the Public Health Act, and respectfully state that, with the exception of a few cases of diphtheria in the winter and spring, the health of the city has been unusually good. Nevertheless, I wish to call the atten-

tion of the Board of Health to matters which, in some instances, are dangerous to the public health.

There are at present in the city a number of people engaged in the business of buying, packing and assorting rags, and in some of these places the scraping and boiling of bones, in addition, becomes in many cases a nuisance. Complaints are continually being made about them, and, as it is impossible to keep these places in good sanitary condition, I respectfully suggest that the storing of rags and bone boiling be not allowed within the city limits.

In regard to the disposal of sewage, more especially as the city increases in population and extent, the quantity of solid and fluid excrementitious matters will become enormous.

There are in the city in round numbers about 5,000 privy-pits, water-closets and latrines, in the thickly populated parts of the city, making the night air horrible. The fact of these being covered by a few boards does not at all lessen their power of doing harm; but let these 5,000 privy-pits be thrown into one, and people would realize its capacity for doing mischief. In the southern part of the city the land is low and water is found near the surface, the soil being of such a kind that it cannot absorb either solid or fluid organic matter in sufficient quantity to render it innocuous. This surface water pollutes the wells by its drainage into them; and nothing is more inimical to the health of a community than water befouled by decomposing organic or vegetable matter. These evils can be remedied by doing away with the present system of privy-pits, and substituting the dry earth, or dry ash system, which is quite as cheap and superior in every way.

Numbers of the wells from which water is used, especially in the Third and Fifth Wards (where numbers of them are filled by surface drainage), are in unwholesome proximity to water-closets. It is nonsense to say these wells can be kept clean, for no matter how carefully they are made, sewage may enter, and toads, worms and other creeping things may crawl in and die. There is but one remedy—close up the wells in all places that can be reached by the London Water Works system, and compel the people to use this. There is no purer water on the globe than is supplied by Springbank, and if the people were compelled to use it instead, the death-rate would be sensibly lessened. If privy-pits are to be continued in the city, I would suggest that scavenger carts be employed to remove garbage, and not allow it to be thrown into privy-pits and back yards. In 1883 the July floods filled up or swept away these abominations in London West, and that suburb was never as healthy as it has been since.

On the 4th of October a case of small-pox occurred on York Street, in the person of a man who had been visiting an infected family in Hamilton. Four members of this family died of the disease shortly after his leaving them; and ten days after his arrival here the disease appeared on him. He was removed to the small-pox hospital the same day, the remaining inmates vaccinated, six in number, the house thoroughly disinfected and placed in quarantine. Fifteen days after this man had been removed to the hospital a second case occurred in the same house, undoubtedly contracted from the first. Vaccination in this case not having been successful, he was also sent to the hospital. Both men recovered and were discharged.

Compulsory vaccination has been enforced in the public and separate schools, but not with the general public, stimulated no doubt by the advent of small-pox.

An unusually large number have been vaccinated by the medical gentlemen appointed for that purpose, aggregating in the five wards about 3,250; many of these were adults and primary vaccinations. None were vaccinated who could furnish satisfactory proof of having been vaccinated within six years.

Under Sec. 8, Regulations approved September 5th, 1885, compulsory vaccination will be rigidly enforced.

The building which has been hitherto used as a small-pox hospital is now old and dilapidated—more than eight patients could not safely occupy it at at the same time. It could not be kept warm in winter, and is too near the general hospital to be safe. It is an injury to the ward in which it is situated, and altogether unfit for a small-pox hospital.

T. V. HUTCHINSON,
Medical Health Officer.

OTTAWA.

Medical Health Officer's Report.

In laying before you this my annual report for the year ending on the 31st of October last, it is a pleasing duty for me to record the fact, that the dark clouds which seemed to rise threateningly in the early part of the summer season, have, for the time being, at all events, disappeared from our horizon.

It is a subject for mutual congratulation, that, notwithstanding the justifiable anxiety and fear felt at the probable invasion of this country by cholera, which in the early spring rapidly spread in several European countries; also the not less just cause of alarm arising from the dangers of a most fatal epidemic of *variola*, which, during the last six months, decimated the populations of the commercial metropolis of the neighbouring Province, the public health in our city during the last twelve months has been satisfactorily good.

Though having enjoyed comparative immunity, the occasional development in our city, of a sporadic case of such zymotics as diphtheria, scarlatina, measles, whooping-cough and typhoid fever; and the comparatively large infantile mortality during the summer months, are pretty sure indicators that our sanitary condition is not as yet satisfactory, and that the death rate from preventable diseases is larger than it should be.

With a view to prepare and put ourselves in a condition to battle with some chance of success against the invasion of cholera, with which this country was threatened, three Sanitary Inspectors, in the early spring were detailed to make a house to house inspection, and report on the following matter:—1st. State of premises. 2nd. System of drainage, if any. 3rd. Trapped, or otherwise. 4th. State of the cellar. 5th. Disposal of house slops. 6th. Water-closet, if any.

Your Board being actuated by a commendable desire to educate the people in matters sanitary, so as to better enable them to understand their responsibility, and more intelligently conform to the laws of health, had five thousand (5,000) copies of a pamphlet containing the principal clauses of the Health Act of 1884, distributed to the public for its information and guidance. The reports of the Inspectors, though not as satisfactory as they might have been, revealed the following facts:—That in the section of the city east of Sapper's bridge, 237 premises—either as regards the yards or outbuildings—were in a state of uncleanliness, varying only in degree, and needing the services of the scavengers. In the same section 44 cellars, owing to total want or defective drainage, were reported as containing water in greater or lesser quantities. In the section west of the Sapper's bridge 92 premises were reported as foul, and 22 cellars as unhealthy and containing water; in this section it was found that there were 356 water-closets, and 50 in the eastern section; a few of those I regret to say discharge in street sewers, made of loose dry stone walls, which never were intended for such a purpose, and which it is desirable to replace by properly made drains capable of serving all the purposes of modern requirements.

In many places throughout the city, the much to be condemned practice of throwing kitchen refuse and waste water on the surface of the ground in the yard or in the street still prevails. The disposal of garbage in every well regulated household, is a matter of no small importance. In order to insure proper disposal of this, and to meet the wishes of many in this respect, I would again respectfully recommend the employment of scavenger carts to gather and remove this matter as often as needed in the summer months.

From the Inspectors' reports, I note with pleasure, that the laudable practice of burning all solid kitchen refuse is being carried out by many. The removal of objectionable matter from the yard or outbuildings was inforced in all cases, and all unsanitary conditions of the dwelling-house, whether resulting from total want or defective drainage were remedied wherever feasible; in some localities, however, the desired object could not be reached owing to the remoteness of the premises from public drains. In compliance with the expressed wish of your Board, the slaughter-houses which had been for years an

objectionable feature, and a very frequent source of complaint, have all removed without the city limits.

The emptying of privy-vaults is now being done under a new contract, which has been so framed as to do away with some objectionable features that had existed heretofore. This work done as it is by the pail and barrel system is under the control of two Inspectors, who are watchful that no injustice is done the public in the payment exacted for the same.

After having enjoyed complete immunity from small-pox for a period of over four years, our city was, early in April last, visited by this loathsome disease—a case having developed in a private boarding-house, then tenanted by fourteen persons, being reported to me on the 6th of that month. The origin of this case seemed surrounded with considerable uncertainty; I believe, however, that the infection had been brought to this house by a traveller, who ten or twelve days prior to this date had for a short period boarded there. From this source six cases had originated, two of whom had proved fatal.

It is satisfactory to state, however, that by the effective isolation of each case as it developed, and the judicious application of precautionary measures adopted, this outbreak was kept under control, and the disease completely eradicated with in a very few weeks. The simultaneous appearance of two cases of this disease in Montreal, which, in a few weeks, developed into an epidemic of most fatal proportions, naturally caused a great deal of alarm at the more than probable invasion of our city, in view of its close commercial relations, and frequent daily communications with the infected metropolis. Ever watchful of the welfare of the community, and fully convinced of the beneficial results of vaccination, your Board deemed it expedient in such an emergency, to appeal to the public to avail themselves of this protective measure. Six public vaccinators were appointed, who were supplied with vaccine matter by your Board, so that the poor should be vaccinated free of charge, and vaccination was made compulsory. No opposition to this measure was offered by any portion of the community; but, on the contrary, every one seemed to be fully aware of its necessity and merits. The public vaccinators and every physician of this city have been for some time past fully tasked to fill the numerous demands for this operation.

This work is still bravely going on, and I have every reason to suppose that within a few weeks the populations of our city will be as well vaccinated and re-vaccinated as those of any city in Canada.

That we have escaped so far this terrible pestilence, is largely due, every one will admit, to your earnest efforts in safeguarding the welfare of the community, most effectively assisted as we have been by the ever vigilant Provincial Sanitary authorities.

Up to the first of November but five cases of small-pox had been under my notice, all of whom except one were direct importations from Montreal and vicinity; the exception being an Italian girl five years of age, residing in this city, who developed the disease in her mother's house; and out of these five cases up to the present but one has been fatal. So far I have had no difficulty to enforce isolation of such cases in hospitals for that purpose. And strengthened in the execution of my duties by the aid given me by my professional confrères, a fact which I here record, with pleasure, assisted also by an intelligent public, fully awake to the necessity of assuming their share of responsibility in this all important work, I feel confident that our city will be spared the affliction and deplorable results which must follow an epidemic of small-pox in our midst.

Our young city cannot boast as yet of being in the full enjoyment of the perfected systems to which have attained older and wealthier communities; still, in this respect, we are fast working up to the front rank; and right here let me record a fact known to every citizen of Ottawa, that this last year has been for our city one of material progress, both sanitary and otherwise, such as had not been made for years previous. Among the many sanitary improvements achieved during the year, I note with pleasure the successful carrying out of the scheme for the systematic and thorough drainage of St. George's Ward; this work being now partly done, and is to be completed in the early part of next summer. Also many sewers in different streets of the city, where none existed before, and the rebuilding in a proper way defective ones, are works the beneficial results of which our

citizens have learned to appreciate. With its advantageous topographical position, its perfected subsidiary drainage, and its plentiful supply of pure, healthy water, it is safe to assert that Ottawa must become one of the wealthiest cities of the Dominion of Canada.

A. ROBILLARD, M.D.,
Medical Health Officer.

ST. CATHARINES.

Chairman's Report.

In compliance with the requirements of the Public Health Act of 1884, I have the honour to submit the second annual report of the Local Board of Health, to the close of the year ending 30th November.

Early in November, 1884. the scavengers appointed by the Board began a thorough system of cleaning out cess-pools, privy-vaults, etc., and continued the same until May, 1885. The contents of these vaults were contracted for, and removed from the city in a manner which gave general satisfaction. A regular house to house inspection has been made by the Inspector, who reports having found a great improvement in the condition of yards, cellars, etc. The inspector has also made frequent visits to the slaughter-houses and cow-byres. I have personally accompanied him on several occasions when inspecting the cow-byres, and have found them clean, well kept, and the cattle in a good and healthy condition.

The sanitary condition of the lanes and alleys, in the rear of our business streets, has been greatly improved since the organization of this Board, and during the past year the Inspector has had very little trouble in preventing persons from depositing dirt and rubbish in these places. A source of great complaint has been removed by the construction of a sewer on James Street, from Sommerset Street to St. Paul Street, by the Board of Works during the past summer, and it is to be hoped, that as early as possible next year, a system of traps and mud catching basins will be constructed at the gratings of the King and Queen Street sewer, similar in design to the one recently built at the corner of King and James Streets, (if this is done it will be necessary to provide for the ventilation of this sewer, by means of gratings placed on the man-holes, at intervals along the top of the sewer). This, with an automatic flushing tank at the head of the sewer, and the proposed alterations at the mouth of the sewer, at Lock Two, will remove the cause of complaint against this most useful drain.

Early in September small-pox was discovered, almost simultaneously in three houses in the city, and at the time created considerable excitement, as is well known. The disease was imported from Montreal by a young man employed on the propeller *Cuba*, trading between that city and Chicago.

Your Board at once isolated and placarded the infected houses, engaged a physician to attend the cases, and proceeded to erect an hospital for the accommodation of small-pox patients. There were in all eleven cases, five in one family, and four in another, and two in another, of these one case proved fatal, the patient being a young woman who had never been successfully vaccinated. Two of the patients were over seventy years of age, but are both convalescent. The balance of the patients were discharged and the hospital closed on the 28th November, having been occupied in all forty-six days. The houses in which this disease has prevailed have been thoroughly disinfected, the infected clothing and bedding destroyed, and every precaution taken to prevent the spread of the disease.

A Public Vaccinator was appointed, and a large number of persons, mostly children, were vaccinated free of charge, in addition to this, a large number were vaccinated by the medical men of the city. The expenditure, on account of small-pox, to date has been as follows :—

Erection and furnishing hospital	$ 745 00
Medical attendance	750 00
Provisions	155 50
Medical supplies (including vaccine points)	168 52
Replacing clothing and bedding destroyed	105 13
Sanitary police and fumigation corps	123 75
Sundry accounts	77 21
Services (of Doctor) Public Vaccinator	160 00
Nurses	92 00
	$2,377 11

Diphtheria has been somewhat prevalent during the past season, but fortunately has not been of a malignant type, only two deaths having been reported to date.

Scarlet fever, measles and whooping cough have existed in our midst. In all cases, as soon as reports of above diseases were made, the houses in which cases existed were placarded, and every precaution taken to prevent their spread.

Typhoid fever has been much less prevalent than last year, and of a less fatal character.

Your Board have reason to believe that some of the medical men of the city do not report all of the cases of typhoid that come under their care, and have decided, that when evidence of this fact is procurable, to prosecute the offenders.

The total death-rate from all causes in the city during the twelve months ending December 1st, 1885, was 157.

It may justly be considered a matter for congratulation, that we escaped with so few cases of small-pox, when it is known that two cases existed and were convalescing without a physician having been called, or any precautions taken to isolate the infected premises.

The expenditure of the Board has exceeded the estimate for the year (which was placed at $500, and based on ordinary sanitary work only) by a considerable amount, this was entirely unavoidable, owing to the small-pox outbreak.

In conclusion, I would say that the Board are indebted to Dr. Dougan for the very valuable services rendered to them, also to the Inspector, Mr. Clark, for his attention to the wants of the patients whilst they were confined in the sanitarium.

GEO. C. CARLISLE,
Chairman of the Board of Health.

ST. THOMAS.

Medical Health Officer's Report.

It gives me great pleasure as Medical Health Officer of the City of St. Thomas, to present the first annual report, and in stating that the city has not been visited by zymotic disease in an epidemic form; although, I must acknowledge, the deaths from contagious diseases have been somewhat large, in proportion to other diseases.

The Sanitary Inspector has been very assiduous in the performance of his duties, and in no previous year has the city been in a better sanitary condition than during the present one.

The greatest drawback the city is labouring under, at the present time, is the scarcity of good water for domestic use. Although we have a first-class supply of water for fire and mechanical purposes, yet for household use it is lacking, and it becomes my duty to state that I consider the larger percentage of deaths arise, in a great measure, from the lack of good water.

Dr. Corlis, the Chairman of the Board of Health, and I, have examined a large number of specimens of water from various wells throughout the city, and with the exception of a very few, we have found them totally unfit for domestic purposes.

Every care has been exercised to prevent the spread of contagious diseases, by placarding with proper notices, houses containing patients thus afflicted, and by using disinfectants.

During the past few months, precautionary measures have been taken by the Board of Health, and citizens in general, to be prepared, in case we had been visited by small-pox.

The children in all the schools of the city have been vaccinated.

I have visited all the schools, and made an examination of each scholar, and vaccinated upwards of 500.

The vaccinations among the citizens have been quite general.

The Board of Health recommended to the City Council the necessity of procuring a proper building for the reception of cases of small-pox, and on their recommendation, such a building was purchased, and will be fitted up, and made comfortable for that purpose.

J. B. TWEEDALE,
Medical Health Officer.

TORONTO.

Annual Report of the Local Board of Health.

To the Council of the Corporation of the City of Toronto:

The Local Board of Health begs to submit herewith, in compliance with the provisions of the Public Health Act, 1884, the Annual Report of the Medical Health Officer, which contains a detailed statement of the work of the Board during the year, and full information as to the sanitary condition of the Municipality.

Respectfully submitted.

THOMAS ALLEN,
Chairman.

Board Room, Toronto, November 16th., 1885.

Medical Health Officer's Report.

THE OFFICE OF THE MEDICAL HEALTH OFFICER,

November 14th., 1885.

To the Chairman and Members of the Local Board of Health:

GENTLEMEN,—I have the honour, in accordance with the By-law of the Public Health Act, to present my Report on the sanitary condition of the city, also of the work pursued in connection with the Medical Health Office for the year ending the 1st November, 1885. The very full Report presented last year, a copy of which I lay before you, renders it unnecessary to make very extended remarks. At the same time, I beg respectfully to ask the attention of the Board to the Report of last year as well as to this, as most of the statements therein made, are now quite as applicable as they were then.

In the performance of my work of the year, up to the 1st of May, I was without any assistant in the office, except a secretary employed by myself. During this period, the complaints by citizens of insanitary evils, of which there were not a few, were given to the City Commissioner, excepting a limited number I found time personally to attend to. A certain number of cases were also disposed of by sending official notices to the owner, or agent of the property.

As I found time during the winter months, I visited a number of establishments where food was manufactured or handled. Among these were the city bakeries. The object of these visits was to learn the sanitary condition of the premises, the attention paid to cleanliness by the proprietors, and to give such instructions as seemed necessary to promote the healthfulness of place and person.

In accordance with a resolution adopted by the Board of Health of the previous year, when cases of scarlet fever were reported, I visited the house to see that proper and efficient means of isolation and disinfection were pursued.

In addition to the house to house inspection, each Inspector attended to complaints (in his district of insanitary evils) made by citizens. Of such complaints there were upwards of 800. In addition to these, when cases of typhoid fever and diphtheria were reported, an Inspector was directed to inspect the place of disease. In certain cases in the house to house visitation, places were found in so bad a condition, that they received the same attention as the complaints. The aggregate of these specials attended to by the Inspectors during the season amounts to about 1,400.

In a number of cases, when the Inspector failed to find the owner or agent, or where he refused to abate the evil, a formal notice was sent informing the responsible party of the complaint, and the requirements of the law. Two hundred and five such notices have been sent out since the 1st of May, with the result of prompt attention in a good many instances. But when no attention was paid to the notice, the matter was given to the City Commissioner to deal with.

The large increase of mortality from typhoid fever and diphtheria in the last year, as compared with the previous year, is a matter for serious consideration. After making due allowance for increase of population, the difference is so great as to call for immediate consideration of the causes of these maladies. Both of them are recognised as preventable diseases. They are what are called filth diseases. They are due to insanitary evils, which should, if possible, be promptly removed.

Small-pox.

The alarming epidemic of small-pox in Montreal, which has prevailed since midsummer, has been the cause of much uneasiness in Toronto and the Province generally. Fortunately, thus far, the disease has not obtained a foothold in the city. For several years Toronto has been remarkably free from this pestilence. Since the 9th of August last, when the first case of the disease was reported, it has appeared in nine distinct instances, at different periods, and in different parts of the city—except in the first instance, when the mother who was nursing the child contracted varioloid. By prompt isolation, disinfection, and vaccination, the disease in each case was exterminated, without extending beyond the first case.

A boy nearly five years old, who was received at the Small-pox Hospital, died as a result of the disease; but he had weak lungs previously, which contributed to the result.

At the present time there are but two cases of small-pox in the city.

During the last two months some 9,000 have been vaccinated, free of charge by the city. I have reason to believe a large number, perhaps as many more, have been vaccinated by private physicians.

Free vaccination takes place daily at the Medical Health Office, and twice a week in the afternoon at five other stations in the city, and oftener, if there be a sufficient demand. In fact, the Board avails itself of every facility to give free vaccination to the citizens. The Board so far has found it unnecessary to enforce the law as to compulsory vaccination. However, should the voluntary compliance by the public not continue, especially should small-pox continue to break out in the city, house to house visitation to secure vaccination of all will become necessary.

It may be stated that the management of the small-pox cases does not indicate the amount of work and responsibility which have devolved upon the Medical Health Office. Some twenty cases of suspected small-pox have been reported from time to time to the office, which upon investigation did not prove to be such. But in a large number of these cases the conclusion could only be reached after several days, to allow the ailment to develop. Meanwhile the family was placed in quarantine.

Again, the families from which the small-pox cases were taken were kept in surveillence for a fortnight, to see that other members had not contracted the disease.

All of which is respectfully submitted.

WM. CANNIFF, M.D., M.R.C.S., Eng.,
Medical Health Officer.

TOWNS.

Chatham.

Chairman's Report.

As required by the Public Health Act of 1884, I hereby submit our annual report of the Chatham Board of Health for the year 1885.

The Board has met regularly each month, all the members, with very few exceptions, being present, and have taken the greatest interest and pains to have the sanitary regulations carried out, and, when necessary, enforced.

Early in the season we asked the Council to give us a Health Inspector, as a permanent officer, which request was complied with. Our Inspector has made a house to house inspection, causing many wells to be cleaned and others filled. He had all the foul privies cleaned, and reported at each meeting what had been done, and entering all complaints in the complaint book kept at the Secretary's office.

The Board is much in favour of the dry earth closet system, and have done their utmost in advocating its general use; and have several times asked the Council to pass a by-law to make its use compulsory, but so far without effect. We will continue to urge on them the necessity of water-tight vaults, if they do not see fit to grant the dry earth closet system, as such a system would be the nearest approach to water-works, which seems at present to be in a very embryonic and nebulous state of existence.

The different sewers have been flushed, and copperas deposited in the traps; alleys cleaned, garbage and other filth removed. The Board has taken every means to make vaccination compulsory. The Vaccination Act being in force before the outbreak of the scourge in Montreal, was all the more readily complied with on that account. So much good work has been done by vaccination and re-vaccination that our town need not fear any severe outbreak of small-pox.

With the exception of a few cases of scarlet and typhoid fever and diphtheria, there have been no other cases of contagious or infectious diseases, and the Town of Chatham has been in a healthy condition comparing it with other years.

The Inspector has promptly served all householders with the proper notices, on receipt of the Medical Practitioner's Report of any contagious disease existing.

Our medical men were somewhat remiss in their duty in reporting contagious and infectious diseases, owing to the want of proper compensation, but they are now complying with the law with considerable punctuality.

Should I be allowed to make a suggestion, it would be a change in the law in this respect, as I do not think we will get proper reports from our Medical Practitioners, unless they are paid for such service, as in other countries.

J. P. RUTHERFORD, M.D.,
Chairman.

Windsor.

Chairman's Report.

To the Municipal Council of the Town of Windsor.

In conformity with the Statute (The Public Health Act, 1884) and Town By-law, No. 435, I herewith present a report, or detailed statement of the work of the Board of Health during the year.

The work done by the Board is shown very fully by the Medical Health Officer's Report, which is herewith submitted, It is very gratifying to know that the town has

suffered very little from contagious diseases during the year. The Board, believing that "prevention is better than cure," caused printed notices to be distributed early in the month of May to every house in town, warning the inhabitants to clean up their premises, etc.; and where garbage and filth might be deposited, the latter being immediately removed at the expense of the Board to a safe locality.

Again, in the month of June, printed notices were distributed to every householder, advising the proper use of sulphur and copperas as disinfectants, and offering to supply the same at cost price.

Owing to our town being on the main line of travel from east to west, and the alarming spread of small-pox during the latter part of the present year in the City of Montreal, and to a less extent in other places, the Board deemed it advisable to have the building known as the Hospital, or Pest-House, with the small buildings adjoining, thoroughly over-hauled, and materially improved. This was done by the Board of Works of the town, at an expense of $86.25. Fortunately the buildings were not required. The amount placed in the estimates for the Board of Health for the present year was $600, and the amount expended during the said period, not including the $86.25 for repairs to the Hospital, was $595.97.

The Board was well organized, and with a staff of efficient officers. The salaries paid to the latter amounted to $400. It is to be hoped that the suggestions contained in the Medical Health Officer's Report will be adopted and carried out by the new Board next year.

WINDSOR, December, 1885.

FRANCIS CLEARY,
Chairman.

Medical Health Officer's Report.

TO FRANCIS CLEARY, ESQ., CHAIRMAN, BOARD OF HEALTH, WINDSOR.

DEAR SIR,—It is my pleasing duty to chronicle another year in which the town has enjoyed an almost total immunity from contagious diseases.

As the strictest surveillance has been kept up by the Board of Health, it is doubtful if any cases of scarlet fever or diptheria have escaped notice.

Total number of cases of scarlet fever	7
Total number of cases of diphtheria	7
Mortality from scarlet fever, none; diphtheria	3

Not a single case of either disease could be traced from one house to another. The system of placarding these diseases for the past four years, and of preventing communication through visiting neighbours and friends, has now become so well recognized as a preventative of disease that the people of Windsor vie with the Health Office in carrying out the very letter of the law.

Ten meetings of the Board have been called during the year, and at four of them there was no quorum. If Boards of Health are to do real work, their numbers should be reduced to five, or power to act delegated to three, the Mayor and Health Officer being two of that number.

The subjoined circular marked "A," was issued in May, with most satisfactory results. One hundred and sixty loads of garbage were taken from the alleys, at a cost of $128.

In June, the appended circular marked "B," was issued, and its directions have been fairly observed.

An odourless excavating machine was imported, under the impression that the people would rather avail themselves of it than the old cart system; but those having it in charge were either too careless, or incompetent.

During the year upwards of sixty complaints issued from the Health Office. The nuisances complained of were promptly abated, only two convictions being made.

At the outbreak of small-pox in Montreal, Windsor, with the recollections of 1882 still fresh, took prompt action to guard against this disease. Three physicians were detailed to attend at the hose-houses for two hours, twice a week. They were supplied with bovine virus, obtained through the Provincial Board of Health, and directed to vaccinate all who might apply, charging twenty-five cents each. Those who could not pay, were vaccinated gratuitously. Only 130 presented themselves, but large numbers were attended to by their family physicians. The inhabitants were pretty thoroughly vaccinated in 1882.

There is a large contagious disease hospital fully equipped, capable of accommodating fifty patients. There are also three detached buildings which are held in readiness to receive stray cases without opening up the large building. The Grand Trunk Railway Company, immediately on being requested to do so, placed a passenger car in a convenient position to the station, in which patients who developed the disease in travelling, might be isolated till conveyed to hospital. This may seem like extraordinary precaution; but it must be remembered that this is one of the principal international crossings, and it is only by maintaining the strictest vigilance that we avoid the embargo of quarantine by Detroit.

The sewerage system has been largely extended this year, 9,823 feet of brick sewers having been built, varying in diameter from eighteen inches to six feet at a cost of $43,290.

The School Board has expended this year $935.20, in constructing latrines, and improving old closets.

More stringent regulations should be adopted in flushing sewers regularly, and particularly in keeping the stagnant water in the receiving basins fresh. During dry periods the Inspector should be required to deposit some copperas in each basin.

None but those licensed to do so should be allowed to clean closets, and bonds for the due performance of the work be required of them.

An inspection of all premises should be made next spring, and a certificate required by each householder that his closet has been emptied.

Slaughter-houses are an ever-present nuisance. Many butchers slaughter on their premises, and empty the blood and entrails of animals into the sewer. This does more to pollute them than all other offal of the town put together.

In order to secure the co-operation of the public, I beg to direct attention to the principal sources of food supply. Each individual should make it a part of his religion to see that the butcher who supplies him with meat, the baker who supplies him with bread, the dairyman who brings him milk, and others who deal in edibles, keep their premises clean, and do no act to contaminate the food supplied by them. If they know that the public is fully alive to what it has a right to expect of them, and that escaping the eye of the Health Officer will not exonerate them, it will go far towards cleaning up premises which are now reeking with filth.

After this year ice for domestic use should not be cut below Windsor for a distance of five miles; and a by-law should be passed immediately regulating the matter, so that dealers may know where to get their supply for next year.

Yours faithfully,

JOHN COVENTRY, M.D.
Medical Health Officer.

"A"

CLEAN UP.—*Board of Health Notice.*—All privy-vaults, cess-pools and reservoirs must be cleaned by the 15th day of May in conformity with by-law No. 435. In order to place it within the power of everyone to clean up his premises, and to secure uniformity of action, permission is granted to empty garbage, offal and other refuse, but in no case the contents of privy-vaults, in the alley in rear or in the street in front of your premises, from whence it will be removed free of cost. This permission is only granted till the 20th of May inst., after which date all parties having filthy premises, unclean closets and persons emptying garbage or other filth in the alleys or streets of the town will be prosecuted. The following persons are authorized to remove night soil, the Odourless Excavating Company; orders left at No. 10 Ouellette avenue; Edward

Giles, Goyeau street; John Evans, Goyeau street; E. S. Moore, McDougall street. The maximum charge for this kind of work will be ten cents per cubic foot, but each party is supposed to make his own bargain. Clean your closets before May 15th; clean your premises before May 20th. Use Copperas dissolved in hot water freely during the summer months. Trim your shade trees to a height of nine feet from the sidewalk, as required by by-law No. 400.

FRANCIS CLEARY,
Chairman Board of Health.

WINDSOR, May 5th 1885.

"B"

HAVING CLEANED UP KEEP CLEAN.—*Board of Health Notice.*—Copperas and Sulphur will be supplied by the Board of Health at the Town Hall for cost price: two pounds Sulphur for ten cents; five pounds Copperas for ten cents. Sulphur should be rubbed up with Saltpetre in the proportions of six of the former to one of the latter and burned in rooms having a musty or bad smell; in damp cellars and in closed spaces under houses. It is well to burn some in closets where clothing is hung up for a long time. Copperas should be dissolved in hot water, one and a-half pounds Copperas to a gallon of water, and poured into water-closets and privy-vaults twice a week during hot weather. It should be sprinkled with a watering pan wherever dishwater, soapsuds or other filth has been spilled. A quart of Copperas water poured down the kitchen sink just before going to bed will disinfect it and the drain, and prevent the foul odour which is noticeable in nearly every house having a sink. One of the most frequent causes of sickness in Windsor is dampness under houses. You cannot spend money for a better purpose than in remedying this evil.

JOHN COVENTRY,
Medical Health Officer.
FRANCIS CLEARY,
Chairman.

WINDSOR, June 20th, 1885.

TOWNSHIPS.

MARIPOSA TOWNSHIP.

Medical Health Officer's Report.

In presenting my annual report, it gives me pleasure to be able to state that during the past year the sanitary condition of the township appears to have been good. We have not at present any epidemic of contagious or infectious disease, unless perhaps a few cases of Whooping Cough, and the past year has been singularly free from such epidemics, Diphtheria being the only contagious disease that showed any tendency to malignancy or indication of becoming to any extent epidemic. Fourteen cases of this disease have been reported, twelve of which occurred in my own practice. The first four or five cases were unusually malignant and speedily fatal, two of the little sufferers dying almost immediately, and before any means could be applied to alleviate; two others died after a somewhat more protracted course, the rest all recovering, although seriously ill. The origin of this epidemic, with its peculiar malignancy, could, we think, be traced to its source—one of the sons is a taxidermist, and had been for some considerable time previously working at his business in and about the house. The skins of a very large number of birds and smaller animals were stuffed, and as far as we could discover, proper precautions were not taken in the disposal of the carcases. The father had also, during the fall and early part of the winter, followed the business of making dog-skin mittens; he informed me that he had made fifty pairs. Such a wholesale manufacture would necessitate the sacrifice of a large number of dogs, and we were led to believe the carcases of these were not disposed of in accordance with strict sanitary rules. To anyone understanding the cause of this disease, the above evidence must be conclusive; and we hope the members of the Board will excuse us for troubling them with those details, because of the importance of the subject and the terrible penalty attached to carelessness—four little ones snatched suddenly away from the bosom of one family.

Of Scarlet Fever seven cases have been reported, all of which recovered; of Typhoid Fever two cases, one of which died; of Whooping Cough four cases, all of which recovered. The above is, we think, a favourable showing, in view of the fact that we have a large and numerously settled township, and also of the fact that we have had in our midst Typhoid and Scarlet Fever germs, and the limits of those diseases have been kept circumscribed—in the one to two patients and in the other to seven. This is also, we think, good evidence of the efficiency of the means employed, and of the assistance the people give the attending physician in carrying out those sanitary regulations so necessary to the stamping out of disease.

It is a matter for congratulation that the people evidently begin to see and appreciate the aims and objects of the organization of Health Boards: and, as the education of the public in sanitary matters becomes more complete, we may take it as granted that we will be able to depend more and more on its co-operation in all matters pertaining to the public health, and that Local Boards of Health will become recognized municipal institutions.

I might say that a large number of our people have taken advantage of the opportunity you have offered them of being vaccinated. The vaccine which was at first supplied proved to be not reliable, but supplies obtained afterwards were very good.

As your Medical Health Officer I would suggest that you request your Secretary to furnish at future annual meetings mortuary statistics of the township; such statistics would be very interesting to me and to the people generally, as by them we would be able to discover what disease in this locality produces the most fatal results. Taking my own personal experience as a guide, I believe we would find that Consumption of the Lungs would far and away precede the rest: and if Consumption is recognized as the most fatal disease, can we not do or suggest something that may have, at least, a tendency to check or mitigate the course of this unrelenting destroyer? Our township is, speaking generally, flat, with clay subsoil: the natural drainage is bad, the ground holding the water so that we have for a great part of the time, especially in spring and fall, either a damp surface or a damp subsoil. This, in addition to making the air wet, prolongs the decaying process and renders the air less pure for breathing purposes. When building, our people should be careful to select high and dry situations in order that the cellars may be drained dry and the yards underdrained: the soil kept porous, and the water carried quickly away. We cannot let this opportunity pass without referring to some of the barn and stable yards; especially at this season of the year do they present to ones gaze an apparently unfathomable gulf of mud. We do not expect farmers always to have perfectly dry farm yards, but we think that in many cases much might be done to improve them in this respect; they might be drained, and a good thick layer of gravel put on; or better still, they might be paved with stone, which would be permanent. Mr. Samuel Metherell, at Little Britain, shows a good example, by having his well paved with stone. Another improvement in many back yards would be to fence the cattle back a short distance, at least from the back kitchen door, where we occassionally see them standing complacently chewing their cud and looking at the culinary operations going on within. Your imagination need take no lofty flight to picture the condition of such a door yard, especially in showery weather. It would not, at all events, enhance the sanitary condition of the surroundings.

We notice that many are beautifying their homes by setting out ornamental and shade trees; this is laudable and should be encouraged. Nevertheless, we observe that a goodly number fall into the error of placing the trees too near the dwelling and too closely together. When so placed they have the effect, when they become large, of keeping the beautiful sunlight—which is so conducive to health—out of the house, and also keeping the ground immediately round the house wet. Such a condition will therefore have the effect of rendering the dwelling both dark and damp. We need not portray to you the evil effects of living in dark and damp houses, and the tendency it has to the developement of many diseases. If we want happy, healthy homes we must have them dry and well lighted.

A. E. VROOMAN, M.D.,
Medical Health Officer.

MARKHAM TOWNSHIP.

Secretary's Report.

In making this, my second annual report, under the provisions of "The Public Health Act, 1884," upon work done by the Board and the sanitary condition of the township, I beg leave to report as follows :

The Council, at its first meeting in January, appointed the required number of members to said board ; also, Medical Health Officer and Sanitary Inspector.

The first meeting of the Board was held on the 12th February—all the members present. The Reeve was elected chairman. After hearing the reports from the several members, and discussing the best method to adopt should an epidemic or any contagious disease visit our municipality, the meeting adjourned, to meet again at the call of the Chairman.

On the 17th of October the Chairman called a meeting of the Board for the purpose of considering the necessity of dividing the Township into divisions and appointing Public Vaccinators, as small-pox was at the time raging in the City of Montreal. The Board, in order to meet the danger as far as possible, and to make it as convenient for the people as the circumstances would allow, the municipality was divided into three divisions and a medical man appointed Public Vaccinator for each ; and they were required to visit each school, after giving notice of the day they would attend. The Secretary was authorized to get all necessary blanks and printing required to carry out the scheme, to procure vaccine from the Provincial Board of Health and supply the same to the Public Vaccinators appointed, from time to time as required. The Public Vaccinators to have the vaccine at first cost, and to charge for each vaccination not more than thirty-five cents, the poor to be vaccinated free on presenting an order from any member of the Board of Health or Municipal Council to the Vaccinator, which was done. I am pleased to say that the scheme met with great success, and was approved of by the people, as upwards of 700 availed themselves of the privilege, and a certificate was handed to each from the medical men, certifying that the vaccination had been successful. There were no cases of Diphtheria, Smallpox or malignant fevers, so far as known to the Board, that required our attention.

I am pleased to report that the Medical Health Officer and his assistants took hold of the work energetically, and have carried out their part of it promptly and successfully. We have great reason to congratulate ourselves on the healthy condition of this municipality, and we shall, no doubt, in future derive great benefit from the hygienic precautions taken by the Board.

JOHN STEPHENSON,
Secretary.

(No. 75).

Return of copies of all correspondence between the Government of Canada and the Government of Ontario, and of all Orders in Council, and other papers relative to the alleged proceedings of persons in Canada and the United States, with respect to claims on the Townley or Lawrence-Townley Estates in England. (*Not printed*).

RETURN

To an Order of the Legislative Assembly passed on the 24th February, 1886, for a Return, shewing for each of the years 1883, 1884 and 1885, all sums of money received by the Agriculture and Arts Association, the amount expended in prizes at the annual exhibitions, cost of management of said exhibitions, distinguishing between salaries and other disbursements; salaries paid officials of said associations; all other disbursements made by the said association; balance sheet for each year's transactions, shewing profit or loss as the case may be.

By Command,

ARTHUR S. HARDY,
Secretary.

Office of the Provincial Secretary,
Toronto, March 22nd, 1886.

STATEMENT of Receipts and Expenditure of the Agriculture and Arts Association for 1883, 1884 and 1885.

1883.

Receipts.	$ c.
January 1—To cash on hand	6184 16
Legislative grant	10000 00
Special grants for prizes	1291 20
Receipts from exhibition of 1883	12019 25
Interest on Prince of Wales' fund and bank account	337 94
Rent of building	2000 00
Furniture (sold)	12 00
Registration fees and sale of herd books	2608 00
	34,452 55

Expenditure.	
Premiums paid at exhibition of 1883 in Guelph	14729 30
Expenses of exhibition, including printing and advertising	5655 17
Special exhibition grants to Guelph, etc	798 77
Council expenses, ordinary and exhibition	1495 44
Salaries—Agriculture and Arts Association	1300 00
Salaries—Herd books' department	1260 56
Herd book, printing, stationery, etc	2441 00
Library, legal, repairs, and office expenses	238 65
Halifax exhibits paid freight for 1882	327 14
Interest on Mortgage	350 00
Postage	423 75
Insurance	83 75
Veterinary museum	180 50
Veterinary College	170 00
Furniture, safe, etc	100 00
Prize farm expenses	192 00
Ploughing matches	1000 00
Educational scheme	180 95
Fat cattle show	500 00
Cash on hand	3025 26
	34,452 54

1884.

Receipts.	
January 1—To cash on hand	3025 56
Legislative grant	10000 00
Dominion grant	4650 00
Special grants for prizes	373 00
Receipts from exhibition—all sources	10598 93
Interest on Prince of Wales' fund and bank account	144 15
Rent of building	2000 00
Antwerp exhibition	298 29
Veterinary fine	25 00
Registration fees and sale of herd books	2587 00
	33,701 93

Expenditure.	
By Premiums paid at Ottawa	14840 39
Exhibition expenses, including printing and advertising	6487 71
Council expenses, ordinary and exhibition	1225 86
Salaries—Agricultural and Arts Association	1500 00
Salaries—Herd book department	1195 00
Herd book, printing, stationery, etc	1440 98
Repair account, government, etc	2097 53
Postage	461 25
Educational scheme	373 26
Fat Cattle show	533 77
Forward	30,155 19

STATEMENT of Receipts and Expenditure of the Agriculture and Arts Association for 1883, 1884 and 1885—*Continued.*

	$ c.
Brought forward	30155 19
Interest on mortgage	350 00
Insurance	83 75
Veterinary College	209 25
Veterinary Museum	46 50
Prize farms	175 00
Rent, to Ontario Government, heating	300 00
Antwerp exhibition	298 29
Ploughing matches	300 00
Library, legal, printing and office expenses	316 59
Cash on hand	1467 36
	33,701 93

1885.

Receipts.

January 1—To cash on hand	1467 36
Legislative grant	10000 00
Dominion grant	9445 81
Special grants for prizes	609 50
Receipts from exhibition—all sources	15229 22
Interest, Prince of Wales, and bank account	118 60
Rent	2000 00
Registration fees and sale of herd books	2175 75
	41,046 24

Expenditure.

By premiums paid at London Exhibition	18953 25
Expenses and printing—printing and advertising duplicated for Dominion exhibition—also building in London	9286 08
Dominion freights paid	2695 68
Salaries—Agriculture and Arts Association	1600 00
Salaries—Herd book department	1141 00
Herd book, printing and stationery	1322 35
Repairs, legal, stationery, etc	180 67
Postage	577 36
Interest on mortgage, etc	325 00
Fat stock show	585 92
Council expenses, ordinary and exhibition	1529 13
Educational scheme	313 50
Insurance	83 75
Heating to Ontario Government	200 00
Veterinary College	195 80
Veterinary Museum	107 80
Prize farms	251 65
Cash on hand	1697 30
	41,046 24

ASSETS of Agriculture and Arts Association, January 1st, 1886.

Assets.	$ c.	*Liabilities.*	$ c.
To cash in bank	1697 30	By mortgage on real estate	5000 00
Library	2000 00	Amount due Ontario Government	2000 00
Herd books	2866 00	Veterinary Museum	180 51
Prince of Wales' fund, on mortgage	800 00	Assets over Liabilities	34732 79
Office furniture, etc	550 00		
Real estate, value of building	34000 00		
	41,913 30		41,913 30

HENRY WADE,
Secretary.

Agriculture and Arts Association.

(Re Exhibitions.)

Detailed Statement of Expenditure, 1883, 1884 and 1885.

	$ c.	$ c.
1883.		
Paid in prizes at Guelph, 1883		14839 50
Printing and advertising	1607 13	
Salaries—labour and judging	2518 57	
Bands, forage, bill posting and other expenses	1529 47	
		5655 17
Council expenses, exhibition		607 42
		21,102 09
1884.		
Paid in prizes at Ottawa		14840 39
Printing and advertising	1626 83	
Salaries—labour and judging	2450 62	
Bands, forage, exhibition committee, bill posting, local committee, etc.	2468 86	
		6546 31
Council expenses, exhibition		508 50
		21,895 20
1885.		
Paid in prizes at London		18953 25
The three following amounts were duplicated on account of Dominion Exhibition being ordered, after all arrangements for Provincial were made:		
Printing (only)	1119 53	
Salaries—labour and judging	3308 84	
Bands, forage, bill posting, advertising, etc	2725 07	
Buildings, put up and repairs	2213 89	
		9367 33
Dominion freights and expenses		2695 68
Council expenses, exhibition		555 92
		31,572 18

PAPERS

RELATING TO THE NIAGARA FALLS PARK.

By Command.

ARTHUR S. HARDY,
Secretary.

PROVINCIAL SECRETARY'S OFFICE,
TORONTO, March 23, 1886.

THE NIAGARA FALLS PARK.

REPORT OF THE COMMISSIONERS, 18TH SEPTEMBER, 1885.

To the Honourable ARTHUR S. HARDY, Q.C., Secretary of the Province of Ontario.

SIR,—In compliance with the terms of the Act of the Ontario Legislature, 48 Victoria, entitled "An Act for the preservation of the Natural Scenery about Niagara Falls," authorizing the appointment of three Commissioners to be named "The Commissioners of the Niagara Falls Park," the undersigned beg to submit the following preliminary Report:—

The Government having selected Mr. Geo. R. Pattullo, of Woodstock, as Secretary of the Commission, he entered upon his duties on the 1st May.

The services of Mr. John McAree, P. L. S., having been placed at the disposal of the Commission by the Honourable the Commissioner of Crown Lands, he was directed to obtain plans of the lands to be surveyed from the Registry Office of the County of Welland, which, after careful examination by the Commission were found to be very useful as reliable references, and he was directed to make the necessary survey, under instructions, a copy of which accompanies this report.

Before referring specifically to the survey and map of the proposed park, the Commissioners desire to submit some of the reasons which prompted them to extend the limits of the survey to a point near the Railway Suspension Bridge. They were not aware at that time how far down the river the reservation on the south (U. S.) side of the river would extend. Entertaining the opinion that it would be exceedingly desirable to restore and protect the bank of the river all the way down, even below the Railway Suspension Bridge, and as far as the grand and unique scene of the whirlpool, which could be done at a small cost, considering the space to be protected being limited to the reservation of that portion of the bank called the Government Reserve, they instructed Mr. McAree to continue the survey to that point. Having ascertained that the New York State Reservation would not at present extend below the Suspension Bridge for common traffic, your Commissioners directed the surveyor to complete the details of the survey only to the eastern side of the public road called "Ferry Road," next to the Clifton House, and from that point up the river according to instructions.

The survey is now completed, and a copy of the plan accompanies this report. All the lands, with the names of owners and tenants, are distinctly marked, with the area of each property, as well as the total area of what is recommended to be appropriated for the park.

The Commissioners, after having personally and carefully examined the ground, and after giving the subject of the reservation of a park their careful consideration, have laid down on the accompanying plan a red line, showing the limits of the ground they would respectfully recommend as the land boundary of the park, the eastern and north-eastern boundary being the water on the Niagara River, including the Falls, and extending to the upper limits of the Rapids. The area of land contained in the reservation recommended will be about 118 acres. The number of owners, as per accompanying schedule, giving the list of names and quantities, is 16; and the number of tenants or leaseholders is 11.

The object of the Act authorizing the appointment of this Commission being to secure free to the public the scenery in the vicinity of Niagara Falls, preserving as far as possible what still remains of the natural and original, and to endeavor to restore those portions of the ground on and near the bank of the river, within the limits surveyed, which have been denuded of trees, and are now occupied by a variety of buildings (most

of them of inferior character and small value, to as near their natural condition as possible, by planting trees and otherwise, the Commissioners, appreciating the object of the Act, and with a desire to meet its requirements with the least possible financial outlay, have decided that by appropriating that portion of the ground between the river and the top of the bank, extending from the eastern boundary of the Ferry Road to the point near the head of the Rapids, as marked by the red line on the map, containing about 118 acres, the purposes of the Act will be fully met. The brow of the bank is still for the most part covered with a good growth of timber, and hence preserves to a large extent its natural condition and appearance. The configuration of the bank is such as not to be of any special value either for cultivation or building purposes, but it affords a beautiful and natural boundary for the park.

Referring to clause 6 of the Act, which calls for a Report as to the plan, "Which in their opinion ought to be adopted for securing the permanent appropriation of the lands for the object hereinbefore mentioned, the Commissioners respectfully suggest that if the grounds recommended to be appropriated for a Public Park be approved as sufficient, they should be authorized to ascertain the value of the land so selected, by such means as in their judgment would enable them to arrive at a fair and just value of each holding; that the same course be adopted as regards tenants, for the value of their rights, and to take all necessary steps as provided in Clause 10 of the Act. In the event of refusal by the owners or tenants of the sums offered by the Commission, recourse will have to be had to arbitration, as provided by the Act.

Under such conditions the Commissioners wish respectfully to submit that, in some of these cases, it may be necessary to secure the services of experts. The buildings, with the exception of those to which special reference is made, the Commissioners recommend to be removed.

There are three buildings on the property recommended to be appropriated for the public park, which the Commissioners recommend to be retained. One is a small, well-built lodge on the property to be taken from Mr. Bush: another, known as the Museum, is also a substantial stone building; third is a stone structure, the property and residence of Mr. Saul Davis. These buildings can be advantageously adapted for the residence of the superintendent of the park, policemen, guides and such other employees as may be required to protect the park and keep it in order.

With regard to the provision contained in clause No. 6 of the Act, which reads: "and for the improvement and preservation of the property, and as to the mode in which the same should be managed in order to secure the enjoyment of the same as a public park, together with such other matters as the Commissioners may think fit," the Commissioners beg to report that, after giving all these provisions their best consideration, and with the view of harmonizing their action with that of the Commissioners of the "State Reservation" on the opposite side of the river, they would respectfully recommend that the possession of the property to be appropriated for the park, be retained by the Province of Ontario as the property of the Province, and that its management as a free park be also under Provincial control; that all the existing buildings thereon be removed, except the three named; that the machinery for the supply of water be also retained; that the road now on the verge of the bank of the river be moved further back from it; and that the ground within the boundary recommended be laid out and planted, not as a showy garden or fancy grounds, but as nearly as possible as they would be in their natural condition, reserving such points for the enjoyment of the views of the Falls and Rapids as on careful examination of the grounds may be found to be most suitable.

The Commissioners recommend that no hotels, refreshment rooms or booths, for the sale of refreshments or other articles, be allowed within the limits of the park. The ground occupied by the proposed park is not large, and is of a peculiar formation, being a long but narrow strip of land; whilst that in its vicinity, especially on the top of the bank immediately adjoining the boundary recommended for the park, is admirably adapted for building purposes, where hotels and houses of entertainment could be built, all within a very short distance of and convenient to the park.

The Commissioners, in suggesting that the Niagara Park should be the property of the Province, with its management under Provincial control, do not desire to be understood as recommending that the funds for the purchase of the properties and necessary work, be provided out of the Consolidated Revenue of the Province.

At this period of their labour, and until they have ascertained what sum of money will be required to accomplish the desired object, the Commissioners can only throw out a suggestion, in very general terms, as to the mode of providing such funds.

When reporting on the financial requirements, they will endeavour to submit a scheme for providing the necessary funds; they, however, have fair reason for entertaining the opinion that the scheme need entail no financial burden on the Province, but will become in the very early future self-sustaining.

The Commissioners observe that charges are made in the New York State reservation for the use of the inclined railway and for visiting the Cave of the Winds. That these charges are quite satisfactory is indicated by the largely increased number of visitors now daily attracted to the grounds.

The Commissioners have good ground to believe that views of the Great Cataract from the Canadian side are even superior to those in the United States, and that, following the example of our neighbours, equally reasonable charges for seeing and studying them could with like propriety be imposed. The revenue from these would do much toward reimbursing the outlay necessary to secure the land and establish the park.

In submitting this, their preliminary report, the Commissioners are able only to make but a general allusion to what in their judgment will be required to make the Park, as it should be, as a part and parcel of the scenery belonging to the great cataract, so aptly termed by Mr. Carter, the orator of the day on the 15th of July last at the opening of the Free Niagara Reservation, "the Great Shrine to be visited, viewed and admired." They believe that the fitting time for entering into these details will be when they are in a position to state what will be the cost of the land recommended for the Park, the cost of removing the buildings that will not be required, the cost of enclosing the Park, which will be necessary, and the cost of such other works as the Commissioners may consider their duty to recommend to be carried out. They venture, however, to state their belief, which has been arrived at after giving the important subject their most earnest consideration, that no serious difficulties will be found in following the example of our United States neighbors; in acquiring the necessary land, and doing what may be found necessary to preserve the scenery as well as to restore it wherever possible, at an outlay which will be considered moderate in itself in comparison to the great boon of relieving the public from charges and impositions now suffered by all who visit the great falls. At the same time by imposing a very moderate, and indeed trifling charge for seeing points of special beauty and interest, which will require the service of guides and mechanical appliances, a revenue will be acquired which in a reasonable time may reimburse the outlay.

The Commissioners would request an early decision on the sufficiency of the land recommended by them for the Park, and when that is approved, for authority to ascertain the value as provided by clause 10 of the Act.

Accompanying are vouchers for the expenditure thus far incurred by the Commissioners.

All of which is respectfully submitted.

C. S. GZOWSKI, Chairman.
J. W. LANGMUIR,
J. G. MACDONALD,
Commissioners.

GEO. R. PATTULLO, Secretary.

Office of the Niagara Falls Park Commission, Toronto, 18th Sept., 1885.

REPORT OF THE COMMISSIONERS, 7TH DECEMBER, 1885.

To the Honourable, ARTHUR S. HARDY, Q. C.,
Secretary of the Province of Ontario.

SIR,—The Commissioners of the Niagara Falls Park in proceeding to have the lands surveyed and marked out as proposed and selected by their report of the eighteenth of September last, have come to the conclusion that a line slightly different from that proposed by them in that report should be adopted.

They therefore have caused such line to be surveyed and marked out on the ground in lieu of having surveyed and marked the line originally proposed.

The line so surveyed and marked on the ground is shown on the plan herewith submitted, by a bright red line, and by the field notes of the surveyor, Mr. John McAree P.L.S., accompanying this report.

The Commissioners respectfully recommend the adoption of this report.

C. S. GZOWSKI, Chairman.
J. W. LANGMUIR,
J. G. MACDONALD,
Commissioners.
GEO. R. PATTULLO, Secretary

Office of the Niagara Falls Park Commission, Toronto, 7th December, 1885.

COPY of an Order in Council approved by His Honour the Lieutenant-Governor, the 14th day of December, A.D. 1885.

His Honour the Lieutenant-Governor has had under consideration the report, dated 18th September last, of the Commissioners for Niagara Falls Park, appointed under the Niagara Falls Park Act, made by them as a preliminary to their selection and survey upon the ground of the lands to be set apart as a Park under the said Act, and also their report dated 7th December, 1885, wherein they state, that upon proceeding to have the lands to be selected surveyed and marked out, they came to the conclusion, that a line slightly different from that proposed in the said preliminary report, should be adopted, and that they have caused such line to be surveyed and marked out on the ground, in lieu of having the line originally proposed surveyed and marked out.

The Commissioners further report, that the line surveyed and marked out as aforesaid, is marked on the map certified by them, and which accompanies their report, by a bright red line.

His Honour, upon the advice of the Executive Council, has been pleased to approve of the said selection of lands in the vicinity of Niagara Falls, made by the said Commissioners, and marked out and surveyed upon the ground as aforesaid, as being those lands, which in their opinion, are proper to be set apart for the purposes mentioned in the preamble of the said Act, and which said lands are shown on the said map, as bounded by a bright red line as aforesaid, and by the international boundary line on the Niagara River, and which said boundary line, so marked by a bright red line, is more particularly shewn by the survey of the ground by Mr. John McAree, P.L.S., and by his field notes, also accompanying the said report of 7th December, 1885.

His Honour further directs that a copy of the said field notes certified by the Clerk of the Executive Council of Ontario be filed with the said plan in the Registry Office of the County of Welland and in the office of the Commissioner of Crown Lands.

Certified.

J. LONSDALE CAPREOL,
Assistant Clerk Executive Council, Ontario.

REPORT OF THE COMMISSIONERS, 16TH MARCH, 1886.

To the Honourable ARTHUR S. HARDY, Q. C.,
Secretary of the Province of Ontario.

DEAR SIR,—The undersigned regret that the unavoidable delay which arose in commencing the arbitrations with the owners of the lands taken for the Niagara Falls Park, not only postpones the giving of the awards by the Arbitrators, but, of necessity, prevents the Commissioners from submitting their final report until after the prorogation of the present Session of the Legislature.

This has caused the Commissioners to very carefully consider the effect that is likely to be produced by the postponement of the Park project for at least another year, the result of which consideration it is important to at once communicate to you.

The active measures taken since the appointment of the Park Commission, and the progress made to the stage of arbitrations, as well as the publicity given to the proceedings, inspired the general belief that the Government of Ontario, evidently with public approval, intended to carry out the Niagara Falls Park scheme without any delay. Postponement, therefore, for another year, will cause general regret and disappointment, and to the owners of the properties taken for the Park, very serious dissatisfaction.

In the cases of some of the properties yielding a revenue, the owners will be prevented from making repairs, improvements and other contemplated arrangements for carrying on their business. Others again, whose properties are included in the Park boundaries, seeing that the establishment of a free reservation on the American side had not only increased the value of property there, but had created a desire to own property within view of the Falls, cannot avail themselves of the favourable opportunity thus presented to offer their holdings for sale. To such it is quite evident that the delay will cause not only dissatisfaction, but possibly loss.

Another, but in our judgment still more important reason against delay, is the present unusually favourable period for obtaining the necessary funds to carry out the project; the existing condition of the money market, with the very large amount of accumulated capital seeking safe investment, offer rarely occurring advantages for the disposal of first-class securities on most favourable terms. This unusual state of things, not only in Europe, but in the United States and Canada, is not likely to continue. The Commissioners therefore think it extremely desirable not to lose so favourable an opportunity to obtain the necessary funds for establishing the Park.

Although the results of the submissions to the Arbitrators are still unknown, yet the evidence presented by both sides in the eight cases closed and only awaiting awards, with the additional information obtained in the course of these arbitrations, warrant the Commissioners in believing that the entire cost of establishing the Niagara Falls Park to the extent represented on the map already submitted and filed will, in their opinion, not exceed $500,000.

This sum will cover the cost of the expropriated land, enclosing the same, buildings, bridges to the islands, changing roads within the Park, construction of elevators from the top of the bank to the water level, planting trees, laying out the grounds, and all preliminary expenses connected with the undertaking.

Assuming therefore, that the entire cost of establishing the Park will not exceed $500,000, the next most important point to consider is the question of obtaining sufficient revenue for the payment of interest on the bonds issued for founding the park, and maintaining the same. In this connection there are two very important considerations to which the Commissioners desire to give special prominence: Firstly, that the project shall entail no financial burthens whatever on the Province, but in the near future become entirely self-sustaining. Secondly, that the promise made shall be strictly kept, that the Niagara Falls Park shall be as free to the public on the Canada side, as the Niagara Falls Reservation is on the United States side of the river.

The data already in possession of the Commisioners, although more than sufficient to establish the accuracy of their opinion on the ability of the Park scheme to become

self-sustaining, are not yet complete, but when further collated will materially strengthen the opinion expressed in regard to the subject, as they will add to the sources from which revenue will be derived.

Attaching, therefore, the fullest importance to the points referred to, namely a free park, yet with a revenue sufficient to meet the interest on the bonds, and the cost of maintaining the Park, as well as the creation of a sinking fund to extinguish the capital debt, the Commissioners propose that the park shall be absolutely free to all visitors who enter it in order to enjoy its natural beauties, and such views as it affords without artificial aid, not needing machinery, structures, guides, etc.: but, to charge a fee, not exceeding thirty cents, the first year (to be reduced hereafter) to all who may wish to see the magnificent and wonderful sights, requiring guides and artificial aid.

This course will be substantially in harmony with that pursued on the United States side where charges are made for the use of the inclined railway, for visiting the "Cave of the Winds," and we are informed that other points of interest are to be made available to visitors for which additional fees are to be charged.

The amount required to be collected from visitors to the Park to meet the interest on the bonds and the cost of maintaining the Park will be about as follows, viz:

Four per cent. on $500,000	$20,000 00
Annual cost of maintenance, say	15,000 00
In all	$35,000 00

To arrive at data on which to base the calculation of future revenue, information has been obtained from the accounts kept of visitors by the Association which controlled the "Prospect Park" on the United States side of the river, showing that visitors were charged twenty-five cents for entrance to the park, twenty-five cents for the use of the inclined railway, twenty-five cents for the view called "Shadow of the Rock" and one dollar for entrance to what was called "The Art Gallery," making a total of $1.75 to those who wish to see all these points of attraction.

The following figures give the number of visitors in each year since 1882, viz:—

Number of visitors in 1882 was	118,000
" " 1883 was	128,000
" " 1884 was	140,000
And up to the 15th July, 1885, the day on which the State of New York took possession and declared the reservation free	175,000
From the 15th July to the 2nd of October, inclusive, the number of visitors to the reservation as obtained from Mr. Welch, the Superintendent, was	125,400
Making the total number of visitors for the nine months of 1885	303,400

The returns for the remainder of 1885 will considerably augment these figures. Nearly all these visitors were excursionists, several thousand from Canada, who remained only a few hours at the Falls, arriving in the morning and leaving in the afternoon or evening. The travelling community, who stayed at the hotels and visited the Falls a number of times, are not included in the foregoing figures. These numbered upwards of 40,000 persons during the season, but the correct numbers when received will add materially to the total of 303,400 visitors. To obtain $35,000, the annual amount required to pay the interest on the bonds and cost of maintenance, will require 116,667 visitors at 30 cents each; that number being only about 38 per cent. of the total number of paying visitors, chiefly excursionists, who visited the Falls last year. The Commissioners are warranted in entertaining the belief that the calculations submitted of the revenue are largely within the amount that will be realized.

When in addition to the great attraction the Niagara Falls always possessed to visitors, there is added the great boon of free access from importunities by hackmen, curiosity vendors, photographers and others who, in plying their trades, have become an acknowledged imposition and nuisance, there will be an immense increase in the number of visitors.

We have carefully considered the question of a Canadian Park at Niagara Falls in all its bearings, not omitting the importance of its proving self-maintaining, and we do not hesitate to express the opinion that, on the financial basis submitted, there can be no doubt as to the sufficiency of revenue to be derived to pay four per cent. interest on $500,000 bonds, together with the cost of maintenance.

The Commissioners therefore do not hesitate to recommend that the sum of $500,000 be raised by the issue of bonds, payable in forty years, bearing four per cent. interest, payable half-yearly, the bonds to be either Niagara Falls Park bonds, guaranteed by the Province of Ontario, or the bonds of the Province of Ontario, to establish the park. Further details in relation to the issue of these bonds need not be enlarged upon until the advisability of issuing them is decided.

In bringing this letter to a conclusion, we beg to add that we strongly recommend that the surplus revenue, after paying interest on the bonds and cost of maintenance, be applied, firstly, to the reduction of the charges to the public ; and secondly, to the creation of a sinking fund to pay off the bonds. The Commissioners venture to express their belief that within a very few years the amount so appropriated and invested on account of the sinking fund will be more than sufficient to pay off the bonds long before their maturity ; leaving the Niagara Falls Park free from debt, a most valuable productive estate, a permanent monument to the liberal and wise policy of the Government that had the generosity, combined with good taste, to establish it.

In the report of 18th September last, it was suggested that the Niagara Falls Park should be the property of the Province and its management retained under Provincial control. The Commissioners would again most earnestly press this on the consideration of the Government, as the only policy worthy of being adopted by the Province of Ontario, in which this great natural wonder exists.

The Niagara Falls Park should be cleared of every obstacle that interferes with its natural beauty as a locality from which to see the great Cataract, and the privilege of seeing should be made free to all.

We have the honour to remain,
Your obedient Servants,

C. S. GZOWSKI, Chairman.

J. W. LANGMUIR,
J. G. MACDONALD,
Commissioners.

GEO. R. PATTULLO, Secretary.

Office of the Niagara Falls Park Commission, March 16, 1886.

ANNUAL REPORT

Of the Inspector of Legal Offices for the year 1885. Presented to the Legislative Assembly.

By Command,

ARTHUR S. HARDY,

Secretary.

Provincial Secretary's Office,
Toronto, 23rd March, 1886.

ANNUAL REPORT

OF THE

INSPECTOR OF LEGAL OFFICES.

THE HONOURABLE OLIVER MOWAT,
Attorney-General of Ontario.

SIR,—I have the honour to present this my report on the inspection of the Public Legal Offices throughout the Province for the year ending 31st December, 1885.

During this year the following changes took place in the *personnel* of the offices :—

Sheriffs—The late John Smith has been succeeded by Mr. William J. Scarfe as Sheriff of the County of Brant, and the late George Kempt by Mr. John McLennan as Sheriff of the County of Victoria, and Mr. John McQuarrie has been appointed Sheriff of the Rainy River District.

Local Masters—His Honour Judge Stevenson, having resigned in consequence of ill health, has been succeeded by His Honour Judge Upper as Local Master at Cayuga.

Local Registrars, etc.—The late R. D. Chatterton has been succeeded by Mr. John Fisher as Local Registrar, County Court Clerk, and Surrogate Registrar at Cobourg, and Mr. Frank J. Apjohn has been appointed Deputy at Rat Portage for the new district of Rainy River.

SHERIFF'S OFFICES.

I am pleased to be able to state that the books prepared by me in 1884 have come into almost universal use, and as a result not only the want of uniformity, which prevailed at the time of the introduction of the present system of inspection, has decreased to a considerable extent, but the duties of these officers have been performed in a much more satisfactory manner.

Some difficulty was experienced in the application of the new fee book, but with a little instruction from me this has been satisfactorily removed. This book is arranged so as to do away with the necessity of having a cash book, and is adapted for the entry of fees earned as well as those received and disbursements paid, and is in accordance with the requirements of the Act relating to same.

In several of the offices I found that notwithstanding my instructions the execution monies received were entered with the monies received for fees in direct contravention of 42 Vic. cap. 5, which enacts as follows :—

"(1) From and after the 1st day of July next (1879) every sheriff shall keep a "separate book in which he shall enter from day to day all fees and emoluments received "by him by virtue of his office, and also the several amounts disbursed by him from day "to day in carrying on the work of his office."

I also found in some of the offices that execution monies were not entered in any cash book, but merely in the Fi Fa or execution book, thus rendering thorough inspection

or investigation almost impossible, and again others merely entered the monies in their cash book without making any reference thereto in the Fi Fa book.

In some cases where the fees and execution monies were entered together in the cash book, I found the same not balanced. In these cases I gave instructions to have the provisions of the Act carried out.

Although overcharges have to a considerable extent disappeared, yet several cases came under my notice during my inspection, and my attention was called to others by solicitors. Instructions were given so as to prevent a recurrence of this, and where complaints were made they were investigated and disposed of.

The most frequent cases of overcharge were the following:—(1) Poundage on amount realized under writ of execution where the whole amount due is not realized, instead of on the amount paid over to the creditor as referred to in my last annual report, and decided in Michie *et. al. vs.* Reynolds, 24 Q. B. 303

I may be permitted to state in this connection that poundage is held to be chargeable on rent, taxes and insurance paid out of the proceeds of the sale.

(2) Poundage under writ against lands where a party applies to pay of the amount due on a writ of execution against lands, though the sheriff has no writ against goods in his hands, and has taken no steps to sell the lands, he as a rule demands poundage on the amount of the execution, and refuses to deliver up the writs unless the same is first paid. Several complaints of this nature having been made to me, I followed the decision of the late Mr. Justice Burns in a case of Morris *et. al. vs.* Boulton, 2 Com. Law, Ch. Rep. 60, in which he held that a sheriff is not entitled to anything for poundage under a writ of execution against lands, unless he actually makes the money by a sale of the lands.

(3) Under the heads of possession money, bonds, and mileages to seize and post up notices of sale and to sell, only, bailiffs frequently collect more than the legal charges.

In one or two cases I found instances of sheriff's deputies having charged more than the tariff allowed; as an excuse for doing so they stated that the party interested could have the account taxed if he wished, that all the officer wanted was what the tariff allowed. In one case the deputy had charged $60 as fees and upon being asked for an itemized account, stated that he would accept $35 if paid at once. I am glad to be able to report that the above irregularities were not of frequent occurrence. In all of the above cases, I gave such instructions as will I hope prevent these overcharges from being again attempted.

With reference to the Creditor's Relief Act, the Sheriffs, I found, had experienced considerable difficulty in determining what cases came under it. Many had made entries in the book kept under that Act, in cases in which they had received monies without an actual sale, and the same was sufficient to pay the creditors in full. I gave instructions that the monies be entered in the book only when realized by actual sale, or when they were paid without sale but insufficient to pay off the claims against the debtor.

At the request of many of the Sheriffs, I have prepared a table (Appendix A) of fees to which they are entitled under the different statutes and tariffs in force.

Appendix B contains in a tabulated form the statistical returns made by Sheriffs for 1885.

Local Masters.

With two or three exceptions, I found the offices of the Local Masters properly conducted. In consequence of there being no tariff of disbursements passed since the Judicature Act came into force, and several of these officers not being familiar with the various tariffs in force prior to that date, I have at their request, prepared a table (Appendix C) containing the proper fees to which these officers are entitled as Local Masters, Referees of Titles, and Special Examiners.

During my inspection, I observed that orders dispensing with the payment of money into court had been occasionally made by Local Masters. These were no doubt made in ignorance of the decision of His Lordship the Chancellor, that Local Masters had no power to make such orders. Orders had also been made by these officers directing the payment of money in High Court actions as security for costs to the Local Registrar, contrary to

the decision in Leroux *vs.* Lauthier, 2 C. L. T. 48, that all such monies should be directed to be paid into the office of the Accountant of the Supreme Court of Judicature.

I found it difficult to thoroughly inspect some of these offices, in consequence of entries not having been made in the Master's Dockets, or the Master's fees entered in a cash book or docket. The following are among the principal overcharges which had been made by some of these officers: (1) In taking depositions of witnesses in a reference, I found that not only was $1.50 per hour charged in accordance with the tariff, but also 20c. a folio for the evidence so taken, thus in the case of an examination lasting ten hours the proper charge of $1.50 per hour would be $15, but besides this, 50 folios of evidence at 20c. per folio taken during these hours were also charged for, thus making an overcharge of $10.00. (2) When a judgment or order of reference is first taken to a Master's office, it is his duty to file and enter it in his docket for which he is entitled to charge 20c., not 50c. as I found sometimes done. Where it is necessary to consider such judgment or order in the presence of the opposite party, he issues a warrant to consider the same. Upon the return of this he considers the judgment, adds the proper parties, issues notices to creditors and gives other necessary directions, and instead of charging the following sums in accordance with the tariff viz.: 1 hour considering $1.50, notice to creditors 2 fols., 40c., order making parties 20c. a folio, the following have been charged viz.: 2 hours considering and giving directions $3.00, settling notice to creditors $1.00, order for publication of notice 50c., settling notice T, $1.50, in all $6.00 instead of about $2.00 besides filings.

In case of a mortgage action a notice T takes the place of the order, for which a charge of 20c. a folio is allowed.

(3) As to the sale of property, the Solicitor produces his judgment or final order for sale, affidavits as to value, and advertisement for sale duly verified. The charge should be as follows: settling advertisement for sale $1.50, reserve bid 50c., conditions of sale 2 fols. 40c., in all $2.40, but instead the following charges have been made: considering advertisement for sale $1.50, settling advertisement $1.00, settling conditions of sale $1.00, copy of conditions 5 fols. 50c. attending settling reserved bid $1.00, directions and note of reserve bidding 4 fols. 80c., and transmitting reserved bid to auctioneer 50c., in all $6.30, instead of $2.40 as above.

(4) The costs of proving an ordinary claim on a mortgage security, or judgment debt, or simple contract, is allowed at from $8.00 to $15.00, the proper charge where the Solicitor of the party attends personally is $8.00, and where an agent is required to attend $10.00. The officers also differ as to the charges in connection with their fees for this service, the proper fee is $1.50 for hearing and determining and 10c. a filing. Some Masters have charged $1.50 for hearing and determining, $1.30 for taxation and filing, 50c. for transmission of bill for revision, in all $3.30 instead of $1.80, no bill of costs or transmission being necessary.

(5) Another charge not authorized is settling judgment for partition or administration order $1.00, no charge for settling any judgment should be made. Masters have no power to tax bills of costs where there is no reference to them for that purpose, that being the duty of the Local Registrar, Deputy Registrar, or Deputy Clerk of the Crown. Notwithstanding this, Masters have taxed such costs thereby adding to the expense, for instance, the taxation should properly cost $1.00 and filings, but the Master in taxing, charges appointment 50c., taxation 2 hours $2.00, certificate of taxation 50c., besides filings, being $2.00 unnecessarily incurred.

(6) In proceeding with the proving of accounts the party accounting produces his vouchers, which are initialed and disposed of by the Master and returned, but I found that in some offices the Master required all these vouchers to be filed with him, in one case amounting to fifty-one, for which the party was charged $5.10.

The instructions I have given in these matters, and the table of fees herewith, will guide these officers in charging the proper amounts.

On the 28th September, 1875, the Judges of the then Court of Chancery instructed the Registrar to address a circular containing important suggestions to the Masters, with reference to their duties. A copy of this I append as appendix "D."

Appendix E herewith contains a statistical return of the business transacted by these officers during the year.

LOCAL REGISTRARS, DEPUTY REGISTRARS, AND DEPUTY CLERKS OF THE CROWN.

In accordance with my intention, as stated in my last report, I prepared a fee and cash book for the use of these officers, with which they have supplied themselves. This book is so arranged as to shew the fees earned by these officers in each proceeding had before them, and whether paid for in cash or by stamps, together with the receipts and disbursements of the office and other information necessary to enable the officer readily to compile any return that may be required as to the proceedings in his office. I also prepared and supplied all Local Registrars and Deputy Clerks of the Crown, at the expense of the Government, a Solicitor's and Agent's Book required to be kept by these officers under Chancery general orders 33 and 43, and Supreme Court rule 417. These are as follows:

Order 33.—"Every Deputy Registrar is to keep in his office a book to be called The Solicitor's and Agent's Book, in which each solicitor residing elsewhere than in the county in which such Deputy-Registrar's office may be, is to specify the name of an agent being a solicitor of this Court, and having an office in the city or town where the office of such Deputy Registrar is situated, upon whom all writs, pleadings, notices, orders, warrants and other documents and written communications in relation to proceedings conducted in the office of the Local Master or Deputy Registrar of such county may be served."

Order 43.—"All writs, pleadings, notices, orders, writs and other documents and written communications which do not require personal service upon the party to be effected thereby, may be served upon his solicitor residing in the county where such proceedings are conducted, or where such solicitor does not reside in the county where such proceedings are conducted, then upon the agent named in the Solicitor's and Agent's Book, provided for by order 33, and if any such solicitor neglect to cause such entry to be made in the Solicitor's and Agent's Book, the posting up a copy of any such writ, pleading, notice, order, warrant or other document or written communications for the solicitor so neglecting as aforesaid in the office of such Deputy Registrar is to be deemed sufficient service."

Rule 417—"Where the offices of the Deputy Clerk of the Crown and Deputy Registrar in any county are not held by the same person, the Deputy Clerk of the Crown shall, in actions in the Queen's Bench and Common Pleas Divisions, have the powers and duties of a Deputy Registrar (not Local Master) in addition to the powers and duties heretofore belonging to a Deputy Clerk of the Crown. * * * *"

During my inspection of these offices, I perceived in many a noticeable change in respect to keeping the books and papers, as well as in the mode of taxing costs, evidencing a desire on the part of the officers to carry out the instructions given them. In three or four cases, however, the carelessness formerly complained of, I regret to say, still existed.

I have in appendix "F" set forth several of the items erroneously disallowed by these officers on taxations, and also items which have been improperly allowed. I ascertained that some of the Local Judges and Local Masters had, at the request of solicitors, granted *fiats* for counsel, witness and other fees in connection with trials before Judges of the High Court, and also *fiats* for fees on Chamber applications before themselves. Officers taxing bills of costs cannot act upon such *fiats* with respect to counsel fees at trials. The taxing officers at Toronto alone have the power to increase counsel fees beyond the amounts stated in the tariff, and a Local Judge or Master has no power to give a *fiat* for any fee.

On the 8th June last His Lordship the Chancellor, in the Bank of British North America *vs.* The Western Assurance Company, decided that the Administration of Justice Act, 1885, 48 Vict., cap. 13, sec. 22, did not confer upon Local Registrars of the High Court, the power of taxing counsel fees of any greater amount than is allowed by the tariff of costs in force. *Fiats* for counsel fees in Chamber applications were formerly governed by items 165 and 166 in the tariff of 1881, and which are as follows: "165.—Fee to counsel where counsel attend on argument or examination in Chambers, where, in the opinion of the Master or Judge in Chambers the attendance of counsel is required, $2." "166.—But may be increased in the discretion of the Master or Judge in Cham-

bers to a sum not exceeding $10. By Rule of the Supreme Court 544 (18), the above items were struck out, and the following substituted therefor: "165.—On argument in Chambers, in cases proper for the attendance of counsel (to be increased in the discretion of the Master in Chambers, or the Master in Ordinary), $2."

A taxing officer has therefore no authority to allow as a fee on argument in Chambers, or upon examination any larger fee than $2, without a *fiat* from the Master in Chambers at Toronto, or the Master in Ordinary.

The following are instances of carelessness in taxation: (1) In two or three cases actions within the jurisdiction of the County Court were brought in the High Court of Justice, and the costs allowed upon the High Court scale instead of County Court.

(2) In a Hight Court action where County Court costs were directed to be paid the officer while correctly reducing the solicitors fees, improperly allowed the disbursements on the High Court scale instead of reducing them to that of the County Court.

(3) In actions of ejectment, costs in cases of no appearance have been allowed to plaintiff without an affidavit of adverse possession being filed as required by R. S. O., cap. 51, sec. 20, ss. 2.

As a rule I found the books of office had been properly kept. In a few offices the entries were not regularly made or made with sufficient fullness. This was especially the case in the Procedure Book, which should shew everything done in an action after writ of summons issued. In the offices referred to many of the entries were omitted, such as *lis pendens* issued, orders to produce, examination of parties returned, judgment entered, costs taxed, *Fifa* against goods and land to Sheriff of ——— issued, besides other items. All of these should be regularly entered. In the judgment book the judgments were occasionally not entered. Some officers have incorrectly issued certificates of *lis pendens* in actions where the title or interest in the property was not called in question, namely, alimony suits, actions brought for the recovery of the amount due on a promissory note, and open account without any allegation being made as to the title or interest to the property being called in question. This has also been done in mortgage actions with respect to which the statute expressly states that no *lis pendens* is required.

There were not so many stamps omitted from the proceedings the past year as formerly. A difference of practice exists as to the placing of stamps on papers. All filings should be stamped on the outside, all other stamps should be placed on the inside of the margin of the document or proceeding for which the stamp is required, and all original papers, other than judgments or entered orders, should be filed with the officer upon the taxation of costs if not previously filed.

Slight errors still exist with reference to the fees payable to these officers. Lis pendens should have $1 in stamps instead of 50c. as is sometimes only charged, and praecipe for order to produce should have a 10c. stamp on it. In actions which are adjourned at the trial on payment of costs or where a new trial is granted the Clerk is entitled to $2 for entering action a second time, but if adjourned with costs to be costs in the cause or no costs, or when the cause is a remanet then the officer is not entitled to anything.

In entering actions for trial the proper charge is $3 for certifying pleadings and entering action. Nothing should be charged for certificate or praecipe. A certificate of taxation, where the amount of costs is inserted in the judgment, is frequently charged 50c., this is wrong, as the officer taxing the costs inserts the amount in the judgment and a certificate is unnecessary.

Appendix "G" herewith contains a statistical return of the business transacted by these officers during the year.

County Court Clerks.

My remarks as to Local Registrars are also applicable to County Court Clerks. The taxations, if anything, were more carelessly performed than those in High Court matters. I found several of these officers still overcharging. As an instance the proper charges upon entering a judgment in default of appearance are $1.90 without computation, and $2.65 with computation, or if more filings 10c. a filing in addition, made up as follows: 6 filings, 60c., judgment, 50c., taxation, 80c. equal to $1.90, and computation 75c.

Yet as much as $3.75 has been frequently charged without computation, while $3.45 is a very common charge. The difference is made up from unauthorized charges such as the following: docketing judgment, 50c.; computation, 90c.; allocatur, 50c., though there were no papers filed beyond the number allowed for in the charge of $1.90 and filings.

In searching chattel mortgages some of the Clerks charge for three searches instead of one, claiming that the mortgage, affidavit of execution, and affidavit of bona fides are separate documents, and therefore separate searches.

In some taxations unauthorized items and too large amounts have been allowed solicitors; as instances: statement of claim, not 3 folios long, $2 instead of $1; computation, $1; attending for certificate of taxation, 50c., paid for 50c.; copy of special endorsement (besides copy of writ), 40c., the four last mentioned items are not in the tariff and should not have been allowed; attending enter judgment, 50c. allowed instead of 25c.; writ of summons, $2 allowed instead of $1; instructions for pleadings, $1.50 instead of $1.

Appendix "H" herewith contains a statistical return of the business transacted by these officers during the year.

Surrogate Registrars.

A great improvement has taken place in the charges of these officers since my circular of October, 1884, and with one or two exceptions no overcharges have taken place since then. As in the case of the Local Registrars I found it necessary to prepare a fee and cash book for the Surrogate Registrars, with which they have supplied themselves. The charges made will in consequence become more uniform, and inspection the more easily made. In some offices the papers and books were not kept as well as they should have been. Instructions were given so as to prevent this state of things from continuing. Some of the Registrars I found still receiving papers and issuing the grant without first requiring an inventory to be filed. As a result I am of opinion that not only do the Registrars but also the Judges and the Revenue suffer in the amount of fees payable. I found two glaring instances of this in my inspection. In one case the petition stated the amount of personalty to be about $4,400 and the fees were accordingly paid on that value but when the inventory was filed some months afterwards the value was shown to be $8,288, and in the other case the petition stated the value of the personalty to be $7,700, but the inventory when filed shewed the value to be $12.771.50. It would be well if my instructions were required to be followed in this particular.

In two or three offices I found that probates had issued under the Small Estates clause, R. S. O cap. 46, sec. 64, without any stamps, and only $2 having been paid for same where there was valuable realty but personalty less than $200, to prevent this from again occurring I would suggest in all cases where application is made under this clause the fact of there being realty should be distinctly negatived.

In some instances I found that there had not been annexed to the will of which probate had been granted, any affidavit of plight and condition and finding. Instructions given as to these matters will no doubt remedy these omissions.

The directions given by me in 1884 to these officers as to their duties and especially with reference to affixing proper stamps to papers have been with a few exceptions carried out. In the cases where such directions were not followed, the fees payable to the Crown and for which there were no stamps on the papers amounted to about $200. Under the authority vested in me by 48 Vic. cap. 13, sec. 31, I required stamps representing the sums due to be affixed to the papers and cancelled same.

Appendix "I" herewith contains a statistical return of the business transacted by these officers during the year.

County Attornies and Clerks of the Peace.

I regret to state that the returns of convictions by Justices of the Peace have not been made as promptly or as fully as they should have been. Many of the returns shew fines imposed but do not state whether they were collected or not. I would suggest that

County Attornies and Clerks of the Peace call the attention of Justices of the Peace within their counties to the necessity of complying with the Statute in this particular, and also as to making returns promptly.

I have summarized the returns of the Justices of the Peace throughout the province, made to me by the Clerks of the Peace (Appendix "K"). This summary shews the number of convictions made by Justices of the Peace who are not Police Magistrates, and the various offences committed in each county, together with the amount of fines, forfeitures, penalties, or damages imposed, the amounts received thereon and how appropriated, the amounts not paid by the defendants, for which in default of the payment thereof punishment was inflicted, and the amounts unpaid by defendants but in respect of which no punishment was inflicted.

I have also appended a schedule containing a return of all the fees and emoluments earned and received and the disbursements made by the above named officials for the past year. (Appendix "L").

During the year I have visited all the county towns and with two or three exceptions I have inspected all the offices under my supervision throughout the province.

I have the honour to be,
Sir,
Your most obedient servant,
JOHN WINCHESTER,
Inspector.

Osgoode Hall,
Toronto, March, 1886.

APPENDIX A—BEING A TABLE OF FEES TO BE RECEIVED BY SHERIFFS—CIVIL SIDE.

	H. C. J.	C. C.
1.—Summons and other process non bailable, scire facias or Writ of Revivor.		
Receiving, filing and entering and endorsing	0 25	0 10
Serving each defendant	1 50	1 00
Drawing affidavit	0 25	nil.
Commissioner	0 20	0 20
Return	0 50	0 25
Mileage, per mile	0 13	0 13
2.—Subpœnas, Declarations, Rules, Orders, Notices of Motion or other Papers.		
Receiving, filing and entering and endorsing	0 25	0 10
Serving first party	0 75	0 40
Serving each additional party	0 50	0 25
Drawing affidavit	0 25	0 25
Commissioner	0 20	0 20
Return except subpœnas	0 25	0 15
Mileage	0 13	0 13
3.—Fieri Facias (Goods).		
Receiving, filing and entering and endorsing	0 25	0 10
*Warrant	0 75	0 50
Schedule, including copy to defendant, not exceeding five folios	1 00	0 50
Each folio above five	0 10	0 10
Notice of sale, each (3 allowed)	0 75	0 40
Every notice of postponement of sale (3 allowed for each postponement)	0 25	0 20
Drawing advertisement, when required by law to be published in the official Gazette or other newspaper, or to be posted up in a Court House or other place, and transmitting same in each suit	1 50	0 75
Mileage to seize, per mile	0 13	0 13

APPENDIX A—*Continued.*

	H. C. J.	C. C.
3.—Fieri Facias Goods—Continued.		
Mileage to sell, per mile	0 13	0 13
† Poundage upon the sum made in the $, when the sum shall not exceed $1,000	6 per cent.	5 per cent.
And under $4,000	3 "	
When the sum is over $4,000	1½ "	
The two last items are in addition to the poundage allowed up to $1,000. All disbursements necessarily incurred in the care and removal of property.		
Return	0 50	0 25
4.—Fieri Facias (Lands).		
Receiving, filing and entering and endorsing	0 25	0 10
Drawing advertisement, when required by law to be published in the official Gazette or other newspaper, or to be posted up in a Court House or other place, and transmitting same in each suit	1 50	0 75
Every notice of postponement of sale (3 allowed for each postponement)	0 25	0 20
Poundage as above mentioned on goods. The sum actually disbursed for advertisements required by law to be inserted in the official Gazette or other newspaper.		
Return	0 50	0 25
5.—Ca Re and Ca Sa.		
Receiving, filing and entering and endorsing	0 25	0 10
* Warrant on writ not executed by Sheriff or Deputy	0 75	0 50
Arrest, not exceeding $200	2 00	2 00
" over $200 and not exceeding $400	4 00	4 00
" " $400	6 00	.....
Bail bond, or bond to limits	2 00	1 00
Assignment of bond	1 00	0 25
Return	0 50	0 25
Mileage, per mile (both ways allowed)	0 13	0 13
Drawing affidavit in Ca Re matters only	0 25	0 25
Commissioner	0 20	0 20
Poundage, as in executions, in Ca Sa matters only.		
6.—Attachment against absconding debtor.		
Receiving, filing and entering and endorsing	0 25	0 10
* Warrant	0 75	0 50
Seizing estate	3 00	1 50
Valuators, each $1	2 00	2 00
Bond to secure goods, if prepared by Sheriff	1 50	1 50
Mileage, per mile	0 13	0 13
Return	0 50	0 25
Schedule, Poundage and Disbursements, as in Fieri Facias Goods and Lands.		
7.—Writ of Sequestration.		
Receiving, Filing and entering and endorsing	0 25	0 10
* Warrant	0 75	0 25
Seizure of estate and effects	4 00	1 00
Schedule of goods taken, including copy for defendant if not exceeding 5 folios	1 00	0 50
Each folio above five	0 10	0 10
Removing or retaining property, reasonable and necessary disbursements and allowances to be made by the Master or by order of the Court or Judge.		
Mileage in going, per mile	0 13	0 13
Poundage upon sequestration followed by sale, or collection, or on execution. Same as under Fi Fa goods.		
Return	0 50	0 25
8.—Replevin.		
Receiving, filing and entering and endorsing	0 25	0 10
* Warrant or precept	0 75	0 40
Drawing notice for service on defendant	0 75	0 40
Service of writ and notice	1 50	1 00
Delivering goods to the party obtaining the replevin writ	3 00	1 50
Writ de retorno habendo, returning goods to defendant's possession	1 00	0 50
Drawing replevin bond	2 00	1 00
Assignment	1 00	0 25
All necessary disbursements for the possession, care and removal of property taken in replevin.		

APPENDIX A.—*Continued.*

9.—Hab. Fac. Poss. and Restitution.	H. C. J	C. C.
Receiving, filing and entering and endorsing	0 25	0 10
* Warrant	0 75	0 50
Delivery of possession and serving and executing writ of restitution	6 00	2 00
Return	0 50	0 25
‡ Mileage, per mile	0 13	0 13
10.—Writ of Hab. Fac. Seisin (Dower).		
Receiving, filing and entering and endorsing	0 25	
* Warrant	0 75	
Viewing lands and instructing Surveyors, exclusive of mileage, per day	5 00	
Giving possession, exclusive of mileage and assistance	5 00	
Mileage, per mile	0 13	
All necessary disbursements to Surveyors and others for surveying the lands and giving possession to be allowed to the Sheriff.		
Return	0 50	
11.—Writ of Assistance.		
Receiving, filing and entering and endorsing	0 25	
* Warrant	0 75	
Executing writ	5 00	
Return	0 50	
Mileage, per mile	0 13	
All necessary expenses incurred.		
12.—Writ of Enquiry or Escheat or any other writ of a like nature.		
Receiving, filing and entering and endorsing	0 25	0 10
* Warrant	0 75	0 50
† Presiding or attendance per diem	5 00	4 00
Summoning each Juror	0 50	0 50
Bailiff's fee, summoning Jury, per mile	0 13	0 13
Hire of room, if actually paid, not to exceed per diem	2 00	2 00
Mileage from Court House to place where writ executed	0 13	0 13
Return	0 50	0 25
13.—Venire Facias.		
Receiving, filing and entering and endorsing	0 25	0 10
Notice of appointment for ballot of Jury	0 50	0 25
Notice to Clerk of Peace of such appointment	0 50	0 25
Fee on balloting special Jury	5 00	2 50
Fee on striking special Jury	2 50	1 25
Serving each special Juror	0 50	0 25
Returning panel of special Jurors	1 00	0 50
Keeping and checking pay list of special Jurors attendance in each case	1 00	1 00
Return	0 50	0 25
14.—Miscellaneous.		
Every search not being by a party to a cause or his Solicitor	0 30	0 30
Certificate of result of such search, when required (a search for a writ against lands of a party shall include sales under a writ against same party for the then last six months)	0 75	0 75
Every Jury sworn or cause tried before a Judge	1 00	0 80
Every letter written (including copy), required by party or his Solicitor, respecting writs or process when postage prepaid	0 50	0 30
Drawing every affidavit when necessary and prepared by Sheriff	0 25	0 25
For each summoner or writ of Scire Facias, per day, to be paid by the Sheriff	1 00	
Bringing up prisoner on attachment or Habeas Corpus besides travel at 20c. per mile	1 50	
15—Surrogate Court.		
Serving process or other instrument or paper		0 50
Every arrest under process or by order of the Court		1 00
Necessary mileage to serve process or to arrest party, per mile actually travelled (only one way allowed)		0 10
Mileage conveying party to gaol, per mile (to cover all disbursements)		0 20
Making returns to process, instruments or paper		0 20
(Allowance for other services to be specially fixed by Judge, taking the County Court tariff of fees as a guide).		

* Only allowed when writ executed by Bailiff; nothing allowed if executed by Sheriff or Deputy.
† See R. S. O. Chap. 66, Secs. 45, 46 and 47.
‡ Add Fi Fa Goods charges, if costs or damages mentioned in body of writ.
N. B.—Where service of Process non-bailable, Scire Facias or writ of Revivor is not made or recognized by Sheriff, service is not to be allowed nor any fee for affidavit of service.

APPENDIX A—*Continued.*

TABLE OF FEES TO BE RECEIVED BY SHERIFFS FOR THE ADMINISTRATION OF JUSTICE.

I.—Those Payable by the County but Recouped by the Province.

1.	Attending the Assizes or General Sessions, per diem	$5 00
	Attending General Sessions to the Sheriff of the County of York, per diem	4 00
2.	Summoning each Grand Jury for the Assizes or General Sessions	12 00
3.	Summoning each Petit Jury for the Assizes or General Sessions	24 00
4.	For every prisoner discharged from gaol	1 00
	The Sheriff of the County of York only entitled to discharge of prisoners when committed by warrant for trial at the Assizes or General Sessions, or by a Police or Stipendiary Magistrate, each	1 00
5.	Bringing up each prisoner for arraignment, trial and sentence, in all for each prisoner, whether convicted or acquitted	2 00
6.	Drawing Calendar of Prisoners for trial at the Assizes, including copies	5 00
7.	Drawing similar Calendar for Sessions, and copies	4 00
	To the Sheriff of the County of York	3 00
8.	Advertising the holding the Assizes or General Sessions	4 00
	The Sheriff of County of York for advertising General Sessions	2 00
9.	Every Annual or General Return required by law or by the Government respecting the Gaol or the Prisoners therein	5 00
10.	Every other Return made to the Government	4 00
*11.	Every Return made to the Legislature	4 00
12.	Every Return to the Sessions required by Statute or by Order of the Court	2 00
13.	Returning Precepts to the Assizes or Sessions	4 00
14.	Conveying Prisoners sentenced at Assizes or Sessions to the Penetentiary or Reformatory, or to another County (exclusive of disbursements), for each day necessarily employed	6 00
15.	Levying Fines, Issues or Recognizances estreated or other process, *(to be levied under sec. 4 of R. S. O. c. 84), $5 per $100 on the first $400 of the sum levied, exclusive of mileage at 10 cents per mile, and on all sums above $400 the same allowance as on executions in civil proceedings.*	
16.	Carrying into execution the sentence of the Court in Capital cases. *All such sums as are unavoidably disbursed to be taxed by the Court or Judge who passed the sentence.*	
17.	Attending and superintending the Execution in such cases	20 00
18.	Summoning each Constable to attend the Assizes or General Sessions (exclusive of mileage at 10 cents a mile)	0 50
19.	Keeping a record of Jurors who have served each Court	2 00
20.	All disbursements actually and necessarily made in guarding prisoners, or in their conveyance to the Penetentiary or Reformatory, to any other County or elsewhere, or for other purposes in the discharge of the duties of his office (where not provided for by law nor hereinbefore specially provided), to be rendered in account in detail, with proper vouchers, to the satisfaction of the Board of Audit, and to be by the Board allowed.	
†21.	Keeping a record of Constables at the Assizes or Sessions, each	2 00

County Judges Criminal Court.

22.	Notification to Judge, in all for each prisoner	1 00
*23.	Bringing up Prisoners before Judge to elect as to mode of trial, including attendance at Court, each person	2 00
24.	Bringing up Prisoner for arraignment on trial and for sentence, including attendances at Court, in all, for each prisoner, whether acquitted or convicted	2 00

†25.	For each day's attendance at an adjournment of the County Judges Criminal Court, in each case Provided that the Sheriff shall not be allowed more than $4 in respect of the same day's service.	2 00
26.	For serving Subpœnas, Arrest under Warrant, travel to serve or execute a Process, and conveying Prisoners to Penetentiary or Reformatory, the like sums as is allowed for like services in other cases under this Act. *See items* 14, 33, 34 *and* 35.	
27.	For making special return of Prisoners sentenced to Central Prison, and of such Prisoners eligible for removal to Central Prison as the Inspector may direct, each prisoner *No more than $5 to be allowed for any one Return, and each Return must cover all Prisoners in Gaol when the same is made.*	1 00
28.	Certified Copy of Sentence	0 50
29.	Taking Prisoner to railway station to be delivered to Central Prison Bailiff, in addition to other necessary expenses incurred in such duty	1 00
*30.	Return and Services in respect of Inquisition on body of a prisoner dying in gaol	4 00
*31.	For general supervision over the Gaols and Prisoners therein, and the books kept in connection with the gaol, in addition to any other allowance, and for stationery and postage, per quarter	25 00
†32.	For services performed under 41 Vict. cap. 19 (Dom.), in each case disposed of under that Act.	2 00

II.—Those Payable out of the County Funds or by the Party for whom the Services are Performed, as the case may be.

33.	Arrest of each individual upon a warrant	$3 00
	Arrest to the Sheriff of the County of York	2 00
34.	Serving Subpœna upon each person	1 00
	To the Sheriff of the County of York	0 50
*35.	Travelling in going to execute warrant or serve subpœna, or in returning with a prisoner, per mile actually travelled	0 13
	Other Sheriffs mentioned below* *Where the service has not been effected the Board of Audit is to be satisfied that due diligence has been used.*	0 10
36.	Conveying Prisoners on Attachment, Judge's Order or Habeas Corpus to another County, exclusive of disbursements, where no charge allowed by law, for each day necessarily employed	6 00
37.	Making return upon Attachment or Writ of Habeas Corpus	2 00

Payable under the Act respecting Jurors and Juries.

‡38.	Pay List for the Petit Jurors summoned to attend the sittings of the High Court of Justice or County Court or General Sessions of the Peace, each list.	
‡39.	Checking said lists at opening of the Court, each day.	
‡40.	Certifying and returning the same to the Treasurer of the County.	
41.	Selecting Jurors, etc., per diem No more than four days allowed unless the number to be selected exceeds 500, when each selector actually attending shall be entitled to be paid as for one additional day for every 200 names selected, and no more.	4 00
42.	For each Panel of Jurors, whether Grand or Petit, returned and summoned in obedience to any General Precept for the return of the Grand or Petit Jurors for any sitting of the High Court or General Sessions of the Peace or County Court respectively under the above Act.	4 00
43.	For copies of such panel to be transmitted to the proper officers, each One copy to the Clerk of the Peace of the proper County, and another to the Registrar of the Common Pleas Division of the High Court of Justice at Toronto or to the Deputy Clerk of Crown or Local Registrar, as the case may be.	1 00
44.	For every Summons served upon the Jurors on any panel	0 25
45.	Every mile necessarily and actually travelled from the County Town for the purpose of serving such summonses (such mileage to be allowed for going only and not for returning)	0 13
	To the Sheriff of the County of York	0 08
†46.	Advertising drafting of Jury Panels	1 00
†47.	Notices to the Clerk of the Peace, and Justices, each	0 50

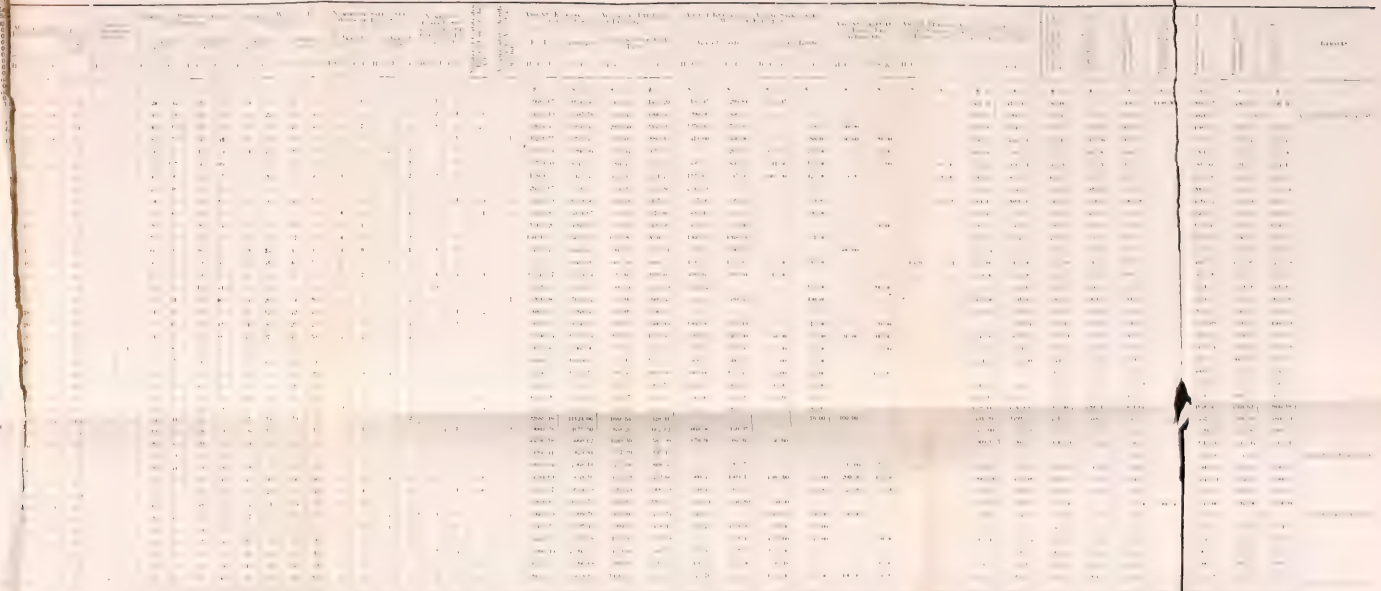
†48. Attending to draft Jury Panels	4 00
†49. Travelling to serve Summonses, per mile	0 13
†50, Writing names of Jurors on cards	2 00

* Does not apply to the Sheriffs of the Counties of Bruce, Carleton, Essex, Grey, Hastings, Huron, Kent, Lambton, Leeds and Grenville, Lincoln, Middlesex, Northumberland and Durham, Oxford, Perth, Simcoe, Victoria, Welland, Wellington, Wentworth and York, or to the Districts of Algoma, Rainy River and Thunder Bay.

† Does not apply to the Sheriff of the County of York.

‡ Such remuneration as the County Council by by-law determines.

APPENDIX B.—Containing in Tabulated Form Statistics as Returned by the different Sheriffs for the year ending 31st December, 1885.



APPENDIX "C".

Referred to in the Foregoing Report.

I.—Table of Fees Chargeable by a Local Master.

	Higher Scale.	Lower Scale.
Filing Judgment or Order	$0 20	$0 10
Every Summons, Warrant or Appointment	0 50	0 10
Administering Oath or taking Affirmation	0 20	0 20
Marking each Exhibit	0 20	0 10
Drawing Depositions (in Infancy matters only), Reports or Orders, per folio	0 20	0 20
Fair Copy, per folio (when necessary)	0 10	0 10
Copy of papers given out when required, per folio	0 10	0 10
Every Attendance upon a reference or enlargement thereof	1 50	0 50
For each additional hour	1 50	0 50
Fee on Report signed (only one in each action)	2 00	*nil.*
Every Certificate, *if not longer than two folios*	0 50	0 20
For each folio over two	0 20	*nil.*
Filing each paper or subsequent Order	0 10	0 10
Taxing Costs, per hour	1 00	0 50
Making up and forwarding Depositions, Bills of Costs and proceedings in Masters Office	0 50	0 10
Every special attendance out of office within two miles	2 00	0 50
Every additional mile over two	0 20	0 10
Every attendance on application to a Master in Chambers	1 00	*nil.*
Searching files in office (if within one year)	0 20	0 10
Over one year and within two years	0 30	
Every search beyond that time	0 50	

II.—Fees Chargeable by Referee of Titles Under Chancery Orders, 512 and 513.

Every Summons or Warrant	$0 30
Administering Oath or taking Affirmation	0 20
Marking every exhibit	0 20
Drawing depositions, reports or orders, per folio	0 20
One fair copy when necessary, per folio	0 10
Copy of papers given out when required, per folio	0 10
Every attendance upon a reference	1 00
For each additional hour	1 00
Every certificate	0 50
Filing each paper	0 10
Taxing costs, including attendance	1 00
Making up and forwarding answers and depositions	0 30
Every special attendance out of office within two miles	1 00
Every additional mile above two	0 20
Reading affidavit, per folio	0 02
Matter added, per folio	0 20
Searching files in office	0 20
Every deed in the chain of title other than satisfied mortgages	0 50
Drawing and engrossing certificate of title, or conveyance in duplicate	4 00

III.—Fees Chargeable by a Special Examiner.

	Higher Scale.	Lower Scale.
Every appointment	$0 50	$0 10
Administering oath or taking affirmation	0 20	0 20
Marking each Exhibit	0 20	0 20
Taking depositions, per hour	1 50	*0 20
Fair copy for Solicitor, per folio (when required)	0 10	0 10
Every attendance out of office when within two miles	2 00	0 50
Every attendance out of office above two miles, extra per mile	0 20	0 10
Every Certificate	0 50	0 25
Making up and forwarding answers and depositions, etc., including filing præcipe	0 50	0 10
Every attendance upon an appointment when Solicitor or witnesses do not attend and Examiner not notified	1 00	0 50

* Drawing depositions per folio 20c.

APPENDIX "D".

(Referred to in the foregoing Report.)

REGISTRAR'S OFFICE, OSGOODE HALL,
TORONTO, 28th September, 1875.

SIR,—I am instructed by the Judges to call your attention to the fact, recently brought under their notice, that in taxing costs under the tariff lately promulgated, too little discrimination has, as a general rule, been used in the allowance of the exceptional fees there found.

You are particularly requested to notice the ground of the discretion given to you in dealing with some of the items. The larger fees which you have the power to allow are only to be given where they have been earned; and the work covered by them has been actually performed.

While notifying you of this matter, the opportunity is taken of making the following suggestions: General Order 240 seems to be too much disregarded. In proceedings before the Master it is frequently forgotten that it is his duty to devise the simplest, most speedy and least expensive method of disposing of the references before him, and that he may dispense with proceedings ordinarily taken, or substitute a different course of proceeding from that generally pursued. It lies upon the Master to see that at the earliest moment, and at the least expense, the reference is concluded. The practice in his office should, so far as possible, be assimilated to that before the Court. An appointment should at once be given for taking up the reference, and on the return of the warrant the matter should be proceeded with, unless some insurmountable difficulty is made to appear in the way of so doing. Order 214 expressly lays down the practice which is to be pursued and requires the matter to be proceeded with *de die in diem*. When an adjournment is granted the reason for allowing it should be noted in the Master's book, and made to appear in the Bill of Costs, in order that the taxing Officer may judge of its sufficiency. Let the costs of these adjournments, instead of forming an item in the general Bill of Costs between party and party, be so far as possible, disposed of at the time they are granted; and let them, including not only the fees of the Master, but also of the Solicitor be paid, as a general rule, by the person who asks for the indulgence.—*See General Order* 213.

Let the Costs of all interlocutary matters:—of creditors failing in proving their claims—creditors contesting unsuccessfully for priority, or attempting to establish a claim larger than that found due—be disposed of so far as possible according to the result, and be charged against the party failing, in place of allowing them to be items in the general Bill of Costs charged against the estate, the subject of litigation.—*See General Order* 225.

Where admissions that should have been, have not been made, let the Costs connected therewith be taxed and certified.—*See General Order* 234.

Let all Costs arising from unnecessary proceedings, or from over caution, negligence, or mistake, be disallowed.—*See General Orders* 306 *and* 308.

In cases where persons are not originally before the Court, and they are added or notified in your office, set out the names of such persons, and specify those upon whom you have dispensed with service, and give the reason for so doing.

In every case, whether the Bill be *pro Confesso*, or not, let the Defendant be notified of proceedings in your office, unless some good reason for omitting such service exists.

Whenever an admission or consent is made in your office, let the same be at once entered in the Master's Book and signed by the parties making it, or their Solicitors.

Let the Report set forth whatever may bear on the question of costs, and may enable the Court to deal therewith on the cause coming before it—such as the refusal of the Defendant to account—the want of proper books of account—the improper keeping

thereof—the attempt to prove sums disallowed—the allowance of sums on a surcharge—the periods at which balances are found in the hands of the party accounting, or such other circumstances as may go to show the origin of the litigation and who should be charged with the costs thereof.

Endeavour to make use of *Orders* 214, 584, 585, *and* 586, so as to expedite the proceedings in your office.

I am directed to ask that you will have the goodness to communicate with me by letter, stating what means occur to you for expediting, simplifying, or lessening the expense of proceedings in your office, or before the Court; and to beg that you will make such practical suggestions as your experience leads you to believe may prove beneficial in these respects to the suitors; and, in order the better to do so, that you will kindly consult with the Solicitors in your locality in order that the Court may have the benefit of their advice and co-operation.

The Judges desire that within the first three days of each re-hearing term a return be made to the Registrar of the Court showing what references are pending in your office; how long they have been there, and where delay has occurred, giving such statements as will explain what the cause thereof has been, and why you have not proceeded *de die in diem* and closed the reference; or why you have not, under Order 584, certified the case to the Court.

Your obedient servant,

A. GRANT,

Registrar.

APPENDIX E.—Being a Return of business transacted by Local Masters

COUNTIES OR DISTRICTS.	Number of summons and notice to originate proceedings where orders made:—				Number of orders made in Chambers.	Number of judgments or orders brought into the Master's Office for prosecution.	Number of advertisements of sale issued.
	(1) For the administration of estates.	(2) For the partition or sale of property.	(3) Relative to infants under R.S.O., Chap. 40, s. 76.	(4) Under the Winding-up Acts.			
Algoma							
Brant						12	1
Bruce	6	1			17	21	17
Carleton		1			95	31	8
Dufferin						5	
Elgin	1	4	4		10	14	9
Essex		2	3		9	8	2
Frontenac	1	1		1	6	18	2
Grey		4			2	4	4
Haldimand	2					1	2
Halton					1	1	1
Hastings		3			75	39	20
Huron					23	8	10
Kent		5			16	14	8
Lambton						9	3
Lanark		1			2	9	5
Leeds and Grenville	1	2	1		6	7	6
Lennox and Addington							
Lincoln	2	1			22	8	4
Middlesex	6	4		2		43	5
Norfolk		1	1		3	3	2
Northumberland and Durham	4	10			37	31	11
Ontario	1	2	3		8	10	6
Oxford					2	13	5
Peel	1				4	8	2

throughout the Province of Ontario during the year ending December, 1885.

Amount realized by sales.	Number of reports issued.	Number of references for winding up Co.'s pending at date of return.	Number of other references so pending.	Number of bills of costs taxed by Master.	Amount of costs of references, etc., taxed by Master or under his direction.	Amount of commission allowed in administration and partition matters.	Amount of fees earned or salary paid Local Masters.	Remarks.
$ c.					$ c.	$ c.	$ c.	
.....	.....	.....	.....	.....	.....	.....	6 90	
5000 00	5	.....	6	8	603 29	.....	202 30	
33046 35	20	.....	.....	25	2785 68	1040 70	990 00	
18470 00	32	.....	10	51	3596 98	.....	2053 15	
.....	3	.....	2	3	546 10	.....	117 75	
13055 00	13	.....	10	30	3059 73	521 86	557 45	
1800 00	9	.....	2	7	849 04	940 50	340 16	
10610 00	17	1	3	17	1086 33	321 50	702 36	
3310 00	6	.....	3	11	532 11	1218 42	215 40	
4900 00	3	.....	3	13	791 35	47 00	60 15	
5400 00	2	.....	1	2	379 84	978 86	121 90	
34100 00	39	.....	15	22	4048 68	465 00	3870 68	
23578 00	9	.....	3	19	891 62	306 10	2500 00	Commuted as Local Masters and Deputy Registrar.
2200 00	10	.....	4	43	342 00	360 42	1348 17	
5500 00	6	.....	.....	3	.....	.....	226 20	
7817 50	8	.....	6	3	319 03	.....	194 30	
18865 00	9	.....	7	8	902 53	468 50	344 84	
.....	.....	.....	.....	.....	.....	.....	982 46	
12975 00	15	.....	3	11	2468 40	274 81	889 94	
20548 72	32	2	14	32	2966 61	3241 29	1700 43	
5085 00	7	.....	2	9	329 44	313 92	426 06	
38519 86	38	.....	12	47	3456 17	961 85	1732 06	
48920 00	15	1	2	7	1352 70	1061 00	996 05	
30975 20	15	.....	8	24	2505 84	1558 65	406 20	
2565 00	8	.....	6	5	533 28	.....	220 85	

APPENDIX E.—Being a Return of business transacted by Local

COUNTIES OR DISTRICTS.	Number of summons and notice to originate proceedings where orders made:—				Number of orders made in Chambers.	Number of judgments or orders brought into the Master's Office for prosecution.	Number of advertisements of sale issued.
	(1) For the administration of estates.	(2) For the partition or sale of property.	(3) Relative to infants under R.S.O., Chap. 40, s. 76.	(4) Under the Winding-up Acts.			
Perth	4				4	36	19
Peterboro'	1	1			11	10	5
Prescott and Russell	1					4	
Prince Edward						2	2
Renfrew					2	7	
Simcoe	2	2			20	18	6
Stormont, Dundas and Glengarry					24	9	6
Thunder Bay						1	
Victoria	1	4				10	5
Waterloo	4				10	13	6
Welland	1	1			3	2	3
Wellington	3	4			20	23	10
Wentworth	2	1			142	15	19
York						138	45
Totals	44	55	12	3	574	605	259

Masters throughout the Province of Ontario, etc.—*Continued.*

Amount realized by sales.	Number of reports issued.	Number of references for winding up Co.'s pending at date of return.	Number of other references so pending.	Number of bills of costs taxed by Master.	Amount of costs of references, etc., taxed by Master or under his direction.	Amount of commission allowed in administration and partition matters.	Amount of fees earned or salary paid Local Masters.	Remarks.
$ c.					$ c.	$ c.	$ c.	
35193 00	35	.....	11	45	2849 41	1182 00	855 10	
48975 00	13	.....	2	21	1184 83	304 52	939 61	
.....	2	.....	.....	1	62 75	....	202 12	
1125 00	1	.....	.....	1	.....	.....	167 85	
.....	2	.....	.....	1	130 70	... .	78 01	
7200 00	17	.....	10	44	2965 59	.....	823 05	
15680 00	15	.....	8	37	2570 85	725 52	688 41	
.....	.....	.....	.....	.....	.....	.....	282 50	
12481 00	15	.....	8	18	2112 79	664 00	741 16	
14625 00	14	.....	1	12	2262 00	414 00	804 00	
780 00	3	.....	2	2	243 33	130 00	122 53	
24406 00	17	.....	14	9	721 85	375 48	938 17	
4759 66	22	5	6	67	265 03	2070 95	4500 00	Commuted as Local Masters and Deputy Registrar.
141826 00	128	3	41	.....	.....	5503 85	.....	
654291 29	605	12	225	658	49715 88	25450 70	32348 27	

APPENDIX F.

Referred to in the Foregoing Report.

PART I.—Shewing Items of Solicitors Costs Disallowed in part or altogether and which should have been Allowed.

ITEM.	Disallowed or only Allowed at	Should have been allowed at
Attending for writ (this is allowed besides the $2 for writ)		0 50
Affidavit of service of writ when served by Sheriff (allowed wrongly to Solicitor instead of Sheriff)		1 00
Instructions for Motion in Chambers	0 50	1 00
" " Affidavit on production	0 50	1 00
" " Examination of opposite party	0 50	2 00
" " Affidavit of disbursements (should be allowed when anything special added)		1 00
Notice of appearance (allow when given after time for appearance expired, or if a saving)		0 50
Letters to Client (1) advising of trial, (2) result of case when judgment reserved, (3) motion to change venue, (4) result of application to Divisional Court, each		0 50
Brief, 15 folios long (under 5 folios $2, and 10c. a folio over 5 folios)	2 00	3 00
Joinder (where joinder necessary or special, not otherwise)		2 00
Attending enter judgment		0 50
Attending Sheriff with writ		0 50
" " for writ	1 00	0 50
" " " fees (mileage)		0 50
Attending enter for trial and attending deposit pleadings for Judge	0 50	1 00
Letter to agents with papers to file and serve		0 50
Letter from agents advising served		0 50
Judgment roll, 2 folios	0 40	1 00
Fee on judgment		1 00
Instructions for suit, Defendant appears but judgment signed under order of Local Judge	3 00	4 00
Letter from Solicitor returning admission of service of papers sent by opposite party (allow to Solicitor writing letter)		0 50

PART II.—Shewing Items of Solicitor's Costs allowed in part or altogether, and which should have been disallowed.

ITEM.	Allowed at	Should have been disallowed or only allow'd at
Instructions for order to produce	0 50	Disallow.
" " brief on motion in Chambers	2 00	"
Brief (no brief or instructions allowed for motion in Chambers)	2 00	"
Affidavit proving claim where judgment entered in default of appearance and writ specially endorsed	2 00	"
Drawing account, 3 folios long (these two items not necessary where writ specially endorsed)	0 90	"
Affidavit of service of paper (where Solicitor admitted service)	1 00	"
Solicitor attending serve writ of summons or subpœna	1 00	"
Affidavit of service of writ, where not served by Sheriff or service recognized by Sheriff	1 00	"
Attending enter judgment (in addition to attendance for taxation)	1 00	Allow 50 cts.
Attending return of motion	1 00	Only allow
Counsel fee on same	2 00	Counsel fee.
Attending take account computation (default judgment)	1 00	Disallow.
Attending Chambers on motion to strike out appearance entered at defendants request	2 00	Allow $1.
Court or term fee—no statement of claim or defence	1 00	Disallow.
Costs of application to strike out jury notice, motion referred by Local Master to Judge at assize and nothing further done	8 00	Disallow.
(All abortive proceedings must be disallowed unless special order allowing them.)		
Instructions to sue where judgment by default of appearance	4 00	Allow $3.
Instructions to sue, Solicitor is himself plaintiff, (where Solicitor is himself plaintiff or defendant no instructions allowed)	4 00	Disallow.
Instructions for affidavit to get service allowed (Solicitor makes affidavit)	1 00	"
Instructions attending Chambers for appointment to proceed with assessment	1 00	Allow 50 cts.
Drawing appointment	0 50	Disallow.
Common notices (not allowed, besides special endorsement)	0 60	"
Perusing reply (allowed only if a replication, but not common joinder)	1 00	"
Affidavit of mileage where Sheriff charges none	1 00	"
Instructions for reply or joinder, only one instructions for pleadings of $1.50 allowed in course of an action, except for reply to counter claim	1 00	"
Fee on judgment by default, promissory note	4 00	Allow $1 only.
Special endorsement	2 00	1 00
Bill of costs, 3 folios	1 00	0 60
Attending Local Registrar for direction to tax	0 50	Disallow.
Attending for certificate of taxation	0 50	"
" certify pleadings	1 00	Allow 50 cts.
Perusing copy of depositions, 20 folios	1 00	Disallow.
Affidavit of non-appearance	1 00	$1 only.
Attending swear and paid	0 70	
Instructions to apply for fiat for counsel fee	1 00	Disallow.
Draft affidavit in support, 8 folios	1 60	"
Engrossing	0 80	"
Attending to swear and paid	0 70	"
Notice of motion and copy	0 90	Allow 50 cts.
Copy affidavit for opposite party	0 80	Allow if deman'd
Letter with notice to agent, and postage	0 65	Allow.
Agents attending, serve notice	0 50	"
Letter from agents for brief	0 53	Disallow.
Letter to agents with brief, etc	0 80	"
Agents attending for appointment	0 70	"
Letter from agents advising and paid	0 53	"
Agents attending for fiat when officer too busy	0 50	"
Letter from agents advising and paid	0 53	"
Agents attending on return when fiats granted	1 00	Allow 50 cts.
Letter from them returning papers	0 80	Allow 65 cts.

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AL A H JU THOUT	AMOU IONET COUR DEF.	J. B. and Divs.	J. P. Divs.
		c.	$ c.
		.....	.....
		.....	.....
55 00	8 15		
78 90	190 00		
00 00	.....		
55 94	200 00		
30 27	40 35		
	.....		

APPENDIX G.—Being a Return of Business Transacted by Local Registrars, Deputy Registrars, and Deputy Clerks of the Crown throughout the Province of Ontario during the year ending 31st December, 1885.

Number of days of sitting of Judge at trials.	Amount of money paid into Court with defence.		Number of Discharges filed.	Number of assignments filed under 48 Vict., chapter 26 (Ont.)	Amount of fees earned by the Clerk of Court.	
	$	c.			$	c.
			7	2	{ 252	16
					{ +500	00
6			4	10	2	818 73
3	701	06	9	15	1	1,147 70
7	13	30	0	31	19	1,215 39
25	399	51	7	4	5	369 15
3			9	11	....	969 88
4			3	4	4	805 73
13			5	5	1	685 36
8			0	11	7	617 15

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APPENDIX I.—Being a Return of business transacted by Surrogate Registrars

COUNTIES OR DISTRICTS.	Number of Probates issued.	Number of Letters of Administration issued.	Number of Letters of Guardianship issued.	Number of Probates and Letters issued under Sec. 64, Cap. 46, R. S. O. and included in above.	Number of wills proved and dianship issued where			
					Above $100,000.	$100,000 and above $50,000.	$50,000 and above $25,000.	$25,000 and above $10,000
Algoma	2	2						
Brant	50	22	4	2			1	7
Bruce	46	19	4	2				
Carleton	46	36	1	4	1			
Dufferin	17	13	3					1
Elgin	43	31	10	7				4
Essex	32	21	3	1				3
Frontenac	36	17	6	2		1		5
Grey	48	19	3	2		1		2
Haldimand	33	12	4					2
Halton	29	26	1	6				2
Hastings	31	30	7	1		1		
Huron	72	32	4	5				
Kent	48	23	1	2			1	1
Lambton	55	22	4	4				2
Lanark	15	15		3				
Leeds and Grenville	53	15	3	1	1			4
Lennox and Addington	23	5	1			1		
Lincoln	38	16	5	3			1	2
Middlesex	136	61	5	15	1	1		5
Norfolk	32	18	2	1			1	1
Northumberland and Durham	81	38	2	1		1	2	6
Ontario	54	25	8	2	1			3
Oxford	66	28	10	1			1	5
Peel	45	19	2	1				6

throughout the Province of Ontario during the year ending December, 1885.

Letters of Adminstration or Guar- personalty valued as follows:					Number where there is realty, but where the personalty is valued $200 and under.	Total amount of personalty devolving.	Amount of Fees collected by Surrogate Registrar for			
$10,000 and above $5,000.	$5,000 and above $1,000.	$1,000 and above $500.	$500 and above $200.	$200 and under.			Registrar's Fees.	Judge's Fees.	Fee Fund.	Total.
						$ c.	$ c.	$ c.	$ c.	$ c.
.....	4	.....	.....	.....	....	5,600 00	18 38	12 00	10 50	40 88
9	32	10	12	5	2	257,188 42	627 33	441 50	273 50	1,342 33
2	22	23	10	11	7	75,097 00	511 60	232 50	152 50	896 60
3	38	16	17	6	3	315,403 15	376 75	438 50	275 50	1,090 75
1	10	11	5	4	4	52,333 33	218 50	139 00	74 50	432 00
6	37	21	12	8	1	196,840 45	694 38	378 50	226 00	1,298 88
1	15	14	14	6	4	105,366 94	608 72	234 50	152 00	995 22
5	22	14	4	6	2	280,956 00	385 53	367 50	221 00	974 03
5	24	15	12	8	.....	190,579 28	466 20	382 00	219 00	1,067 20
1	20	16	4	6	6	84,762 73	406 25	183 00	128 00	717 25
6	20	6	5	8	6	124,654 14	379 05	229 70	146 00	754 25
4	29	10	12	5	4	154,124 58	482 87	304 50	172 00	959 37
8	42	29	16	13	7	178,544 50	835 92	537 00	273 50	1,646 42
4	37	6	12	10	.....	152,925 00	476 35	286 60	201 50	964 35
1	21	21	16	7	7	97,937 60	408 42	239 50	163 00	810 92
1	12	6	8	5	.....	47,623 50	215 30	196 50	130 00	511 80
3	31	22	8	3	3	491,809 25	560 75	629 40	387 50	1,577 65
.....	10	3	5	.....	1	90,920 00	245 17	195 50	96 00	536 67
1	14	19	16	6	.....	118,948 50	502 07	248 00	165 00	915 07
11	83	40	27	34	17	674,468 27	1,434 15	1,249 00	678 50	3,361 65
5	23	11	10	1	.....	114,032 36	410 43	241 10	156 50	808 03
11	49	31	20	2	.....	399,292 15	335 15	641 50	433 50	1,410 15
7	29	13	14	12	10	326,044 13	590 20	531 70	309 50	1,431 40
8	49	22	15	5	.....	293,497 80	970 00	475 60	325 00	1,711 60
5	31	11	11	5	5	203,535 76	524 19	335 50	223 50	1,083 19

APPENDIX I.—Being a Return of business transacted by Surrogate

COUNTIES OR DISTRICTS.	Number of Probates issued.	Number of Letters of Administration issued.	Number of Letters of Guardianship issued.	Number of Probates and Letters issued under Sec. 64, Cap. 46, R. S. O. and included in above.	Number of Wills proved and dianship issued where			
					Above $100,000.	$100,000 and above $50,000.	$50,000 and above $25,000.	$25,000 and above $10,000.
Perth	54	27	2	3	.....	.....	.....	3
Peterboro'	32	12	2	3	.....	.....	.....	1
Prescott and Russell	19	5	.....	1	.....	.....	.....	1
Prince Edward	33	5	.....	3	.....	.....	.....	1
Renfrew	10	9	2	.....	.....	.....	.....	1
Simcoe	65	36	4	2	.....	.....	2	2
Stormont, Dundas and Glengarry	44	20	2	6	1	.....	.....	2
Thunder Bay	1	4	.....	.....	.....	.....	.....	.....
Victoria	27	13	.....	3	.....	.....	.....	3
Waterloo	65	23	4	3	.....	.....	2	4
Welland	32	23	3	2	.....	1	1	3
Wellington	83	37	4	4	.....	.....	1	2
Wentworth	69	45	8	7	.....	.....	1	7
York	229	160	19	32	2	4	7	25
Total	1894	984	143	135	7	11	21	121

Registrars throughout the Province of Ontario, etc.—*Continued.*

Letters of Administration or Guardianship granted where personalty valued as follows:					Number where there is realty, but where the personalty is valued $200 and under.	Total amount of personalty devolving.	Amount of Fees collected by Surrogate Registrar for			
$10,000 and above $5,000.	$5,000 and above $1,000.	$1,000 and above $500.	$500 and above $200.	$200 and under.			Registrar's Fees.	Judge's Fees.	Fee Fund.	Total.
						$ c.	$ c.	$ c.	$ c.	$ c.
5	32	21	12	8	6	164,501 81	582 91	402 60	220 50	1,206 01
1	16	6	14	7	.....	64,088 37	301 81	168 00	123 50	593 31
.....	10	2	10	1	.....	45,865 52	164 16	83 50	166 50	414 16
3	14	8	6	6	.....	63,919 00	345 47	139 00	93 00	577 47
4	9	4	1	1	.....	53,622 34	123 30	102 00	145 00	370 30
8	40	17	21	7	5	262,630 56	852 75	452 50	312 00	1,617 25
5	26	17	10	9	.....	287,607 25	450 55	382 50	256 50	1,089 55
.....	3	2	.....	.....	.....	8,115 72	17 60	14 50	10 50	42 60
4	12	14	7	3	.....	105,575 00	320 00	165 00	165 00	650 00
7	30	17	15	17	15	233,160 42	607 33	398 50	276 50	1,282 33
1	17	7	15	4	4	200,381 49	719 74	452 10	204 50	1,376 34
6	52	28	17	18	13	251,931 00	904 00	550 50	339 50	1,794 00
5	58	22	14	16	7	325,180 80	878 20	575 00	371 50	1,824 70
45	160	62	42	36	24	2,239,427 00	3,043 10	1,641 50	1,542 50	6,227 10
202	1,183	617	469	309	163	9,337,591 21	21,935 58	14,676 70	9,790 50	45,587 53

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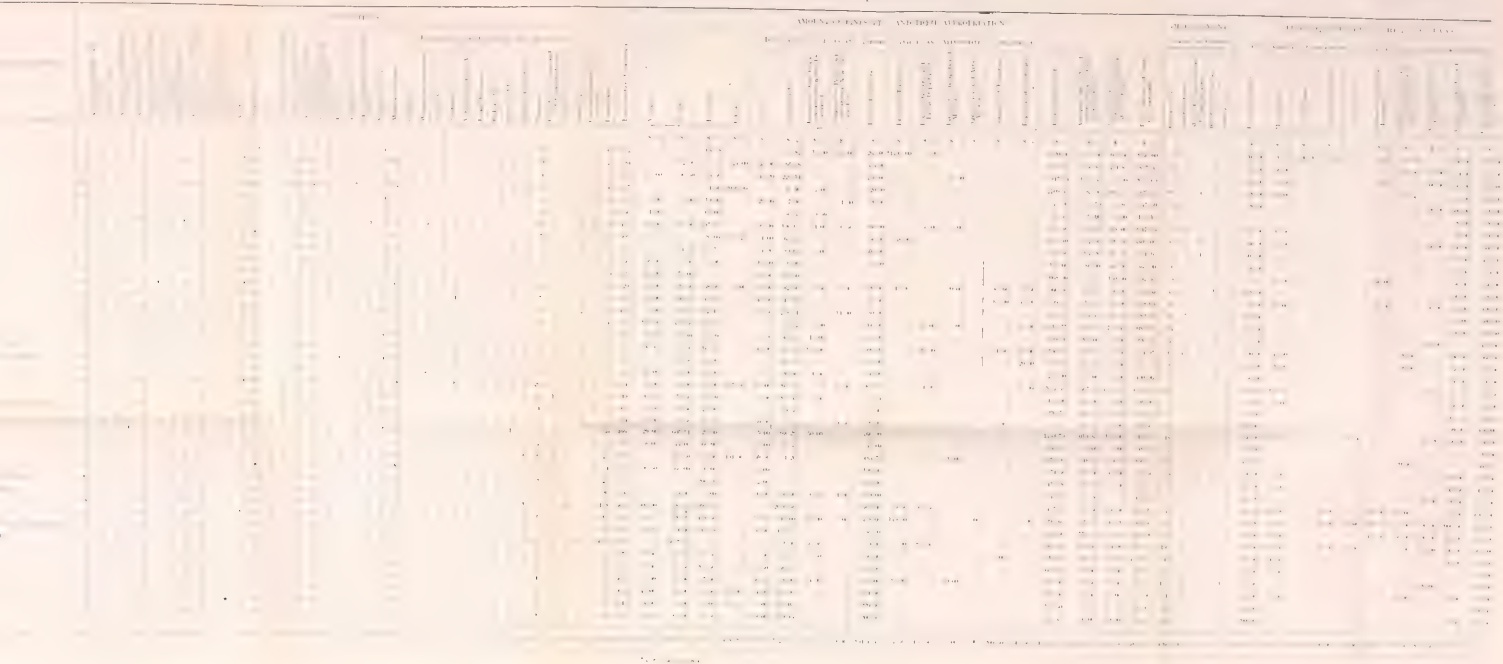
APPENDIX K. Summary of Convictions returned by Her Majesty's Justices of the Peace throughout the Province of Ontario, during the year ending the 31st day of December, 1885, together with the Amount of Fines, etc., imposed, collected and appropriated, and the number of persons imprisoned thereunder



APPENDIX L.—Schedule shewing Return of Fees and Emoluments of the different year ending 31st

County or District	County Town.	Office.	Officer.	Amount Earned.	Salary paid by the Government.
				$ c.	$ c.
Algoma	Sault Ste. Marie	Sheriff	W. H. Carney	695 87	1400 00
		Surrogate Judge	Judge McCrea	12 00	
		Local Master	"	6 90	
		County Attorney	J. J. Kehoe	100 50	400 00
		Clerk of the Peace	"	260 24	400 00
		Local Registrar	T. A. P. Towers	3 00	150 00
		District Court Clerk	"	252 16	500 00
		Surrogate Registrar	"	18 38	
Brant	Brantford	Sheriff	W. J. Scarfe	1170 11	
		Surrogate Judge	Judge Jones	Commuted at	
		Local Master	"	202 30	
		County Attorney	G. R. VanNorman, Q.C.	610 53	
		Clerk of the Peace	"	770 45	
		Local Registrar	W. B. Rubidge	529 70	675 00
		County Court Clerk	"	818 73	
		Surrogate Registrar	"	627 33	
Bruce	Walkerton	Sheriff	W. Sutton	4409 35	
		Surrogate Judge	Judge Kingsmill	Commuted at	
		Local Master	W. A. McLean	990 00	
		Deputy Registrar	"	208 60	
		County Attorney	Thos. Dixon	379 80	
		Clerk of the Peace	"	1205 02	
		Deputy Clerk of the Crown	Wm. Gunn	234 95	450 00
		County Court Clerk	"	1147 70	
		Surrogate Registrar	"	511 60	
Carleton	Ottawa	Sheriff	John Sweetland	6646 57	
		Surrogate Judge	Judge Ross	438 50	
		Local Master	W. M. Matheson	2053 15	
		Deputy Registrar	"	677 07	
		County Attorney	Robert Lees, Q.C.	592 10	

County Judicial Officers in the Province of Ontario, earned and received during the December, 1885.

Total Earnings and Salary.	Total Earnings and Salary by officer in all his offices.	Amount received for present year.	Amount received for previous years.	Total receipts.	Total receipts by officer from all his offices.	Amount disbursed.	Net amount received.	Net amount due to or received by officer by virtue of all his offices.	Remarks.
$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	
.....	2095 87	1873 01	.....	1873 01	1873 01	1496 37	376 64	599 50	
12 00	.....	12 00	.....	12 00	.....	.....	12 00	.....	
6 90	18 90	.....	.....	.....	18 90	.....	.....	18 90	Special Examiner.
500 50	.....	478 50	53 00	531 50	.....	17 25	514 25	.....	
660 24	1160 74	525 37	61 44	586 81	1118 31	.....	586 81	1143 50	
153 00	.....	153 00	.....	153 00	.....	.....	153 00	.....	
752 16	.....	752 16	.....	752 16	.....	5 00	747 16	.....	
18 38	923 54	18 38	.....	18 38	923 54	1 00	17 38	917 54	
.....	1170 11	436 99	.....	.....	436 99	347 23	89 76	822 88	Appointed 16th Sept., 1885.
.....	360 00	360 00	.....	360 00	.....	.....	360 00	.....	
.....	202 30	202 30	.....	202 30	562 30	82 00	120 30	480 30	Special Examiner and Referee of Titles.
610 53	.....	610 53	.....	610 53	.....	.....	610 53	.....	
770 45	1380 98	770 45	.....	770 45	1380 98	.....	770 45	1380 98	
1204 70	.....	1204 70	.....	1204 70	.....	120 18	1084 53	.....	
818 73	.....	805 89	.....	805 89	.....	33 53	772 36	.....	
627 33	2650 76	627 33	.....	627 33	2637 92	112 07	514 96	2384 98	
.....	4409 35	3765 21	641 69	.....	4406 90	1287 37	3119 53	3121 98	
.....	408 00	408 00	.....	.....	408 00	.....	.....	408 00	
990 00	.....	802 20	297 90	1100 10	.....	5 00	1095 10	.....	
208 60	1198 60	208 60	.....	208 60	1308 70	5 00	203 60	1188 60	Special Examiner and Referee of Titles.
379 80	.....	248 60	104 00	352 60	.....	35 00	317 60	.....	
1205 02	1584 82	1074 54	452 41	1526 95	1879 55	65 61	1461 34	1484 21	
684 95	.....	684 95	.....	684 95	.....	.....	684 95	.....	
1147 70	.....	923 76	234 40	1158 16	.....	531 92	626 24	.....	
511 60	2344 25	511 60	.....	511 60	2354 71	265 97	245 63	1546 36	
.....	6646 57	6389 10	891 27	.....	7275 37	2833 14	4442 23	3813 43	
.....	438 50	438 50	.....	.....	438 50	.....	438 50	438 50	
2053 15	.....	2041 95	1 50	2043 45	.....	137 33	1906 12	2576 49	Special Examiner and Referee of Titles.
677 07	2730 22	674 90	8 10	683 07	2726 42	16 40	666 67	.....	
592 10	.....	514 50	.....	514 50	.....	77 60	436 90	.....	

APPENDIX L.—Schedule shewing Return of Fees and Emoluments of the different

COUNTY OR DISTRICT.	COUNTY TOWN.	OFFICE.	OFFICER.	Amount Earned.	Salary paid by the Government.
				$ c.	$ c.
Carleton—*Con*	Ottawa	Clerk of the Peace	Robt. Lees, Q.C.	1059 86	.....
		Deputy Clerk of the Crown	J. P. Featherston	558 00	450 00
		County Court Clerk	"	1215 39	.....
		Surrogate Registrar	"	376 75	.....
Dufferin	Orangeville	Sheriff	Thos. Bowles	2204 93	.....
		Surrogate Judge	Judge McCarthy	139 00	.....
		Local Master	"	117 75	.....
		County Attorney	J. P. McMillan	56 00	.....
		Clerk of the Peace	"	656 35	.....
		Local Registrar	John McLaren	212 40	675 00
		County Court Clerk	"	369 15	.....
		Surrogate Registrar	"	218 50	.....
Elgin	St. Thomas	Sheriff	Dugald Brown	5815 66	.....
		Surrogate Judge	Judge Hughes	378 50	.....
		Local Master	Robert Miller	557 45	.....
		County Attorney	Jas. Stanton	603 20	.....
		Clerk of the Peace	"	659 50	.....
		Local Registrar	D. McLaws	412 00	675 00
		County Court Clerk	"	969 88	.....
		Surrogate Registrar	"	694 38	.....
Essex	Sandwich	Sheriff	J. C. Iler	4785 39	.....
		Surrogate Judge	Judge Horne	234 50	.....
		Local Master	S. S. Macdonell, Q.C. ..	340 16	.....
		Deputy Registrar	" ..	263 63	.....
		County Attorney	" ...	291 52	.....
		Clerk of the Peace	" ...	914 35	.....
		Deputy Clerk of the Crown	F. E. Marcon	160 85	450 00
		County Court Clerk	"	805 73	.....
		Surrogate Registrar	"	608 72	.....
Frontenac ...	Kingston ..	Sheriff	Wm. Ferguson	2065 52	.....

County Judicial Officers in the Province of Ontario, etc.—*Continued.*

Total Earnings and Salary.	Total Earnings and Salary by officer in all his offices.	Amount received for present year.	Amount received for previous years.	Total receipts.	Total receipts by officer from all his offices.	Amount disbursed.	Net amount received.	Net amount due to or received by officer by virtue of all his offices.	Remarks.
$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	
1059 87	1651 96	898 75	.....	898 75	1413 25	27 02	871 73	1547 34	
1008 00	.....	909 30	5 85	915 15	.....	140 00	775 15	.....	
1215 39	.....	1143 69	57 94	1201 63	.....	255 00	946 63	.....	
376 75	2600 14	342 25	8 20	350 45	2467 23	110 00	240 45	2095 14	
.....	2204 93	1626 25	452 36	.....	2078 61	869 03	1209 58	1335 90	
139 00	.....	139 00	.....	139 00	.....	.....	139 00	.....	
117 75	256 75	48 95	36 00	84 95	223 95	3 75	81 20	253 00	
56 00	.....	39 00	51 00	90 00	.....	100 00	.....	.....	
656 35	712 35	623 63	303 00	926 63	1016 63	150 00	766 63	467 35	
887 40	.....	876 10	19 20	895 30	.....	15 56	883 74	.....	
369 15	.....	363 30	4 75	368 05	.....	15 88	352 17	.....	
218 50	1475 05	212 00	.....	212 00	1475 35	17 31	194 69	1430 30	
.....	5815 66	4245 35	983 54	.....	5228 89	2424 26	2804 63	3391 40	
.....	378 50	378 50	.....	378 50	378 50	.....	375 80	378 50	
.....	557 45	372 17	13 10	385 27	385 27	.....	385 27	557 45	Special Examiner.
603 20	.....	603 20	.....	.....	.....	.....	.....	.....	
659 50	1262 70	581 00	.....	.....	1184 20	13 60	1170 60	1249 10	
1087 00	.....	1076 00	15 00	1091 00	.....	70 00	1021 00	.....	
969 88	.....	924 60	20 50	945 10	.....	100 00	845 10	.....	
694 38	2751 26	670 20	31 00	701 20	2737 30	150 00	551 20	2431 26	
.....	4785 39	4635 39	150 00	.....	4785 39	1644 25	3141 14	3141 14	
.....	234 50	234 50	.....	234 50	234 50	.....	.....	234 50	
340 16	.....	340 16	.....	340 16	.....	.....	340 16	.....	
263 63	.....	263 63	17 60	281 23	.....	25 00	256 23	.....	Special Examiner and Referee of Titles.
291 52	.....	205 52	123 75	329 27	.....	.....	329 27	.....	
914 35	1809 66	662 45	278 25	940 70	1891 36	68 65	1822 71	1716 01	
610 85	.....	610 85	.....	610 85	.....	27 00	610 85	.....	
805 73	.....	736 80	.....	736 80	.....	35 73	701 07	.....	
608 72	2025 30	608 72	.....	608 72	1956 37	155 02	453 70	1807 55	
.....	2065 52	1717 14	.....	1717 14	1717 14	348 38	1368 76	1717 14	

APPENDIX L.—Schedule shewing Return of Fees and Emoluments of the different

County or District.	County Town.	Office.	Officer.	Amount Earned.	Salary paid by the Government.
				$ c.	$ c.
Frontenac—*Con* ..	Kingston	Surrogate Judge.....	Judge Price	commuted at	
		Local Master	J. A. Henderson, Q.C.	702 36	.....
		Deputy Registrar	" ..	601 93	.....
		County Attorney	B. M. Britton, Q.C ..	144 05	.....
		Clerk of the Peace.....	" ..	935 18	.....
		Deputy Clerk of the Crown	John Fraser.....	204 30	450 00
		County Court Clerk	"	685 36	.....
		Surrogate Registrar	"	385 53	.....
Grey	Owen Sound ..	Sheriff	C. H. Moore.....	4541 57	.....
		Surrogate Judge.....	Judge McPherson	382 00	.....
		Local Master	Alfred Frost	215 40	.....
		County Attorney	"	211 55	.....
		Clerk of the Peace.....	Wm. Armstrong.....	1362 67	.....
		Local Registrar	George Inglis	129 50	675 00
		County Court Clerk	"	917 15	.....
		Surrogate Registrar	"	466 20	.....
Haldimand	Cayuga.	Sheriff	R. H. Davis.....	2303 17	.....
		Surrogate Judge.....	Judge Upper	183 00	.....
		Local Master	"	60 15	.....
		County Attorney	J. R. Martin	290 92	.....
		Clerk of the Peace.....	"	847 44	.....
		Local Registrar	Jas. Mitchell	140 30	600 00
		County Court Clerk	"	418 35	.....
		Surrogate Registrar	"	406 25	.....
Halton	Milton	Sheriff	M. Clements	1758 41	.....
		Surrogate Judge.....	Judge Miller	commuted at	
		Local Master	"	121 90	.....
		County Attorney	John Dewar.....	162 60	.....
		Clerk of the Peace.....	"	700 37	.....
		Local Registrar	W. L. P. Eager	67 60	600 00

County Judicial Officers in the Province of Ontario.—*Continued.*

Total Earnings and Salary.	Total Earnings and Salary by officer in all his offices.	Amount received for present year.	Amount received for previous years.	Total receipts.	Total receipts by officer from all his offices.	Amount disbursed.	Net amount received.	Net amount due to or received by officer by virtue of all his offices.	Remarks.
$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	
752 00	752 00	752 00	.....	752 00	752 00	.....	752 00	752 00	
702 36	.....	599 60	293 60	893 20	.....	320 00	573 20	.....	
601 93	1304 29	508 68	76 20	584 88	1478 08	215 00	369 88	769 29	Special Examiner and Referee of Titles.
144 05	.....	104 55	74 35	178 90	.....	100 00	78 90	.....	
935 18	1079 23	543 40	343 08	886 48	1065 38	353 84	532 84	625 39	
654 30	.....	635 20	.....	635 20	.....	175 00	460 20	.....	
685 36	.....	578 58	.....	578 58	.....	185 00	393 58	.....	
385 53	1725 19	370 74	.....	370 74	1584 52	190 00	180 74	1175 19	
.....	4541 57	3507 62	1395 08	.....	4902 70	2213 80	2688 90	2327 77	
.....	382 00	382 00	.....	.....	382 00	.....	382 00	382 00	
215 40	.....	192 50	.....	192 50	.....	.....	192 50	.....	
211 55	426 99	122 05	33 90	155 95	348 45	26 40	129 55	400 59	
.....	1362 67	1362 67	316 00	1678 67	1678 67	197 03	1481 64	1165 64	
804 50	.....	804 50	.....	804 50	.....	.....	804 50	.....	
917 15	.....	883 60	.....	883 60	.....	24 63	858 97	.....	
466 20	2187 85	432 40	26 40	458 80	2146 90	124 10	334 70	2039 12	
.....	2303 17	1796 81	325 28	.....	2122 09	499 86	1622 23	1803 31	
183 00	.....	183 00	.....	183 00	.....	.....	183 00	.....	
60 15	243 15	45 00	.....	45 00	228 00	.....	45 00	243 15	
290 92	.....	290 92	.....	290 92	.....	8 00	282 92	.....	
847 44	1138 36	847 44	.....	847 44	1138 36	240 00	607 44	890 36	
740 30	.....	740 30	.....	740 30	.....	30 00	710 30	.....	
418 35	.....	418 35	2 00	420 35	.....	26 00	394 35	.....	
406 25	1564 90	406 25	.....	406 25	1566 90	49 00	357 25	1459 90	
.....	1758 41	1484 16	79 15	.....	1563 31	518 25	1045 06	1240 16	
417 00	.....	.....	.....	417 00	.....	.....	417 00	.....	
121 90	538 90	105 40	90 38	195 78	612 78	10 00	185 78	528 90	Special Examiner.
162 60	.....	122 60	62 00	184 60	.....	7 00	177 60	.....	
700 37	862 97	367 65	315 95	683 60	868 20	16 10	667 50	839 87	
667 60	.....	667 60	.....	667 60	.....	120 00	547 60	.....	

APPENDIX L.—Schedule shewing Return of Fees and Emoluments of the different

County or District.	County Town.	Office.	Officer.	Amount Earned.	Salary paid by the Government.
				$ c.	$ c.
Halton—*Con*	Milton	County Court Clerk.....	W. L. P. Eager	285 90	.....
		Surrogate Judge	"	379 05	.....
Hastings	Belleville	Sheriff	Wm. Hope.....	3977 38	.....
		Surrrogate Judge	Judge Lazier..... ...	304 50	.....
		Local Master	S. S. Lazier	3523 65	.....
		Deputy Registrar.....	"	680 45	.....
		County Attorney	Geo. E. Henderson, Q.C	637 60	.....
		Clerk of the Peace	" ..	1588 78	.....
		Deputy Clerk of the Crown	A. G. Northrup.	723 67	450 00
		County Court Clerk.....	"	1484 26	.....
		Surrogate Registrar	"	482 87	.....
Huron	Goderich	Sheriff	R. Gibbons	5181 58	.....
		Surrogate Judge	Judge Toms	537 00	.....
		Local Master and Deputy Registrar	H. McDermott and S. Malcolmson	commuted at	
		County Attorney	Ira Lewis	302 11	.....
		Clerk of the Peace	"	1354 80	.....
		Deputy Clerk of the Crown	D. McDonald	531 05	500 00
		County Court Clerk.... .	"	1078 20	.....
		Surrogate Registrar	"	835 92	.....
Kent.....	Chatham	Sheriff	John Mercer	4887 87	.....
		Surrogate Judge	Judge Bell.....	286 50	.....
		Local Master	R. O'Hara	1348 17	.....
		Deputy Registrar.....	"	621 28	.....
		County Attorney	Wm. Douglas, Q.C....	900 00	.....
		Clerk of the Peace	"	1180 00	.....
		Deputy Clerk of the Crown	W. A. Campbell	132 00	450 00
		County Court Clerk.....	"	953 60	.....
		Surrogate Registrar.....	"	476 35	.....
Lambton	Sarnia	Sheriff	Jas. Flintoft	3647 90	.....

County Judicial Officers in the Province of Ontario.—*Continued.*

Total Earnings and Salary.	Total Earnings and Salary by officer in all his offices.	Amount received for present year.	Amount received for previous years.	Total receipts.	Total receipts by officer from all his offices.	Amount disbursed.	Net amount received.	Net amount due to or received by officer by virtue of all his offices.	Remarks.
$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	
285 90	.....	285 90	.....	285 90	.....	120 00	165 90	.....	
379 05	1332 55	379 05	.....	379 05	7332 55	120 00	259 05	972 55	
.....	3977 38	2738 16	1350 53	.....	4088 69	1490 81	2597 88	2486 57	
.....	304 50	304 50	.....	304 50	304 50	.....	304 50	304 50	
3523 63	.....	2696 28	.....	2696 28	.....	515 33	2180 95	.....	
680 45	.....	680 45	.....	680 45	3376 73	256 06	424 39	3432 69	Special Examiner and Referee of Titles.
637 60	4204 08	637 60	36 66	674 26	.....	60 00	614 26	.....	
1581 78	2219 38	1581 78	47 00	1628 78	2303 04	310 00	1318 78	1849 38	
1173 67	.....	973 67	.....	973 67	.....	40 50	933 17	.....	
1484 26	.....	1084 26	.....	1084 26	.....	220 00	864 26	.....	
482 87	3140 80	412 00	.....	412 00	2469 93	200 00	212 00	2680 30	
.....	5181 58	3776 78	645 12	.....	4421 90	2537 63	1884 27	2643 95	
.....	537 00	537 00	.....	.....	537 00	.....	537 00	537 00	
.....	2500 00	2500 00	.....	.....	2500 00	.....	.....	2500 00	Special Examiner and Referee of Titles.
302 11	.....	302 11	.....	302 11	.....	22 00	280 11	.....	
1354 80	1656 91	1354 80	.....	1354 80	1656 91	525 00	829 80	1109 91	
1031 05	.....	1031 05	.....	1031 05	.....	35 00	996 05	.....	
1078 20	.....	1078 20	.....	1078 20	.....	15 00	1063 20	.....	
835 92	2945 17	835 92	.....	835 92	2945 17	45 75	790 17	2849 42	
.....	4887 87	3866 37	1697 07	.....	5563 44	1165 91	4397 45	3721 88	
.....	286 50	286 50	.....	286 50	286 50	.....	286 50	286 50	
1348 17	.....	1189 12	89 00	1278 12	.....	10 00	1268 12	.....	
621 28	1969 45	485 88	20 60	505 88	1784 00	17 00	488 88	1941 45	Special Examiner and Referee of Titles.
900 00	.....	635 00	180 00	815 00	.....	150 00	665 00	.....	
1180 00	2080 00	930 00	265 00	1195 00	2010 00	160 00	1035 00	1770 00	
582 00	.....	582 00	.....	582 00	.....	4 80	577 20	.....	
953 60	.....	773 90	78 00	851 90	.....	375 00	476 90	.....	
476 35	2011 95	408 96	23 50	432 46	1866 36	28 00	404 46	1604 15	
.....	3647 90	2527 27	655 91	.....	3183 18	1692 83	1491 35	1955 07	

APPENDIX L.—Schedule shewing Return of Fees and Emoluments of the

County or District.	County Town.	Office.	Officer.	Amount earned.	Salary paid by the Government.
				$ c.	$ c.
Lambton—*Con.*	Sarnia	Surrogate Judge	Judge Robinson	239 50	
		Local Master	do	226 20	
		County Attorney	J. P. Bucke	262 57	
		Clerk of the Peace	"	1122 90	
		Local Registrar	W. R. Gemmill	147 45	675 00
		County Court Clerk	"	808 82	
		Surrogate Registrar	"	408 42	
Lanark	Perth	Sheriff	Jas. Thompson	1524 41	
		Surrogate Judge	Judge Senkler	196 50	
		Local Master	"	194 30	
		County Attorney	E. G. Malloch	348 45	
		Clerk of the Peace	"	530 08	
		Local Registrar	Charles Rice	128 30	675 00
		County Court Clerk	do	280 05	
		Surrogate Registrar	do	215 30	
Leeds & Grenville	Brockville	Sheriff	James Smart	3444 35	
		Surrogate Registrar	Judge Macdonald	commuted at	
		Local Master	J. D. Buell	344 84	
		Deputy Registrar	"	158 78	
		County Attorney	"	237 62	
		Clerk of the Peace	"	704 46	
		Deputy Clerk of the Crown	S. Reynolds	140 30	500 00
		County Court Clerk	"	460 35	
		Surrogate Registrar	"	560 75	
Lennox and Addington	Napanee	Sheriff	O. T. Pruyn	2070 75	
		Surrogate Judge	Judge Wilkinson	195 50	
		Local Master	S. S. Lazier	940 53	
		Deputy Registrar	"	313 50	
		County Attorney	A. L. Morden	143 78	
		Clerk of the Peace	"	638 19	
		Deputy Clerk of the Crown	J. B. McGuin	214 50	400 00

different County Judicial Officers in the Province of Ontario.—*Continued.*

Total Earnings and Salary.	Total Earnings and Salary by officer in all his offices.	Amount received for present year.	Amount received for previous years.	Total receipts.	Total receipts by officer from all his offices.	Amount disbursed.	Net amount received.	Net amount due to or received by officer by virtue of all his offices.	Remarks.
$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	
239 50	.....	239 50	.....	239 50	.....	.....	239 50	.....	
226 20	465 70	224 20	.....	224 20	463 70	.....	244 20	465 70	Special Examiner and Referee of Titles.
262 57	.....	258 48	99 78	358 26	.....	1 97	356 29	.....	
1122 90	1385 47	1134 80	83 80	1218 60	1576 86	.....	1218 60	1383 50	
822 45	.....	842 45	.....	822 45	.....	20 00	802 45	.....	
808 82	.....	808 82	.....	808 82	.....	20 00	788 82	.....	
408 42	2039 69	408 42	.....	408 42	2039 69	10 00	392 42	1989 69	
1524 41	1524 41	997 94	316 21	.....	1314 15	419 36	894 79	1105 05	
196 50	.....	196 50	.....	196 50	.....	.....	196 50	.....	
194 30	390 80	182 30	15 70	198 00	391 50	.....	198 00	390 80	Special Examiner and Referee of Titles.
348 45	.....	191 03	36 00	227 03	.....	18 00	209 03	.....	
530 08	878 53	483 22	203 46	686 68	913 71	25 00	661 68	835 53	
803 30	.....	723 40	24 00	747 40	.....	4 00	743 40	.....	
280 05	.....	210 10	66 51	276 61	.....	4 00	272 61	.....	
215 30	1298 65	185 55	69 37	254 92	1278 93	5 00	249 92	1285 65	
.....	3444 35	2962 26	154 31	3116 57	3116 57	1345 37	1771 20	2098 98	
.....	480 00	480 00	.....	.....	480 00	.....	.....	480 00	
344 84	.....	96 14	47 70	143 84	.....	.....	143 84	.....	Special Examiner and Referee of Titles.
158 78	.....	10 25	.....	10 25	.....	.....	10 25	.....	
237 62	.....	98 80	60 04	158 84	.....	8 00	150 84	.....	
704 46	1445 70	397 29	301 51	698 80	1011 73	23 83	674 97	1413 87	
640 30	.....	640 30	.....	640 30	.....	5 00	635 30	.....	
460 35	.....	460 35	.....	460 35	.....	10 00	450 35	.....	
560 75	1661 40	560 75	.....	560 75	1661 40	5 00	555 75	1641 40	
.....	2070 75	1599 82	535 38	.....	2135 20	1148 47	986 73	922 28	
195 50	195 50	195 50	.....	195 50	195 50	.....	195 50	195 50	
940 53	.....	612 10	.....	612 10	.....	170 71	441 40	.....	Special Examiner.
313 50	1254 03	22 67	.....	22 67	634 77	85 35	.....	997 97	
143 78	.....	140 78	20 00	160 78	.....	8 00	152 78	.....	
638 19	781 97	677 28	299 50	976 78	1137 56	62 69	914 09	711 28	
614 50	.....	604 00	6 30	610 30	.....	.....	610 30	.....	

APPENDIX L.—Schedule shewing Return of Fees and Emoluments of the

COUNTY OR DISTRICT.	COUNTY TOWN.	OFFICE.	OFFICER.	Amount Earned.	Salary paid by the Government.
				$ c.	$ c.
Lennox and Addington—*Con.* ..	Napanee.....	County Court Clerk.....	J. B McGuin.....	394 01	.....
		Surrogate Registrar.....	"	245 17	.....
Lincoln.....	St. Catharines.	Sheriff.....	Jos. A. Woodruff.....	2309 88	.....
		Surrogate Judge.....	Judge Senkler.....	commuted at	
		Local Master.....	F. W. McDonald.....	889 94	.....
		Deputy Registrar.....	"	213 68	.....
		County Attorney.....	John McKeown.....	472 53	.....
		Clerk of the Peace.....	"	1230 63	.....
		Deputy Clerk of the Crown	J. Clench.....	266 55	450 00
		County Court Clerk.....	"	632 28	.....
		Surrogate Registrar.....	"	502 07	.....
Middlesex	London.....	Sheriff.....	William Glass.....	5263 92	.....
		Surrogate Judge.....	Judge Elliott.....	commuted at	
		Local Master.....	James Shanly.....	1700 43	.....
		Deputy Registrar.....	"	813 05	.....
		County Attorney.....	Chas. Hutchinson.....	1950 54	.....
		Clerk of the Peace.....	"	1871 66	.....
		Deputy Clerk of the Crown	John Macbeth.....	712 05	500 00
		County Court Clerk.....	"	2381 15	.....
		Surrogate Registrar.....	"	1434 15	.....
Norfolk.....	Simcoe.....	Sheriff.....	E. Deedes.....	2403 14	.....
		Surrogate Judge.....	Judge Livingstone....	241 10	.....
		County Attorney.....	J. H. Ansley.....	343 50	.....
		Clerk of the Peace.....	"	822 65	.....
		Local Master.....	C. C. Rapelje.....	426 06	.....
		Local Registrar.....	"	77 20	675 00
		County Court Clerk.....	"	514 05	.....
		Surrogate Registrar.....	"	410 43	.....
Northumberland & Durham.....	Cobourg.....	Sheriff.....	I. O. Proctor.....	5397 02	.....
		Surrogate Judge.....	Judge Clark.....	commuted at	

different County Judicial Officers in the Province of Ontario.—*Continued.*

Total Earnings and Salary.	Total Earnings and Salary by officer in all his offices.	Amount received for present year.	Amount received for previous years.	Total receipts.	Total receipts by officer from all his offices.	Amount disbursed.	Net amount received.	Net amount due to or received by officer by virtue of all his offices.	Remarks.
$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	
394 01	.....	272 68	27 42	300 10	.....	8 55	291 55	.....	
245 17	1253 68	174 95	101 55	276 50	1186 90	5 58	270 92	1239 55	
.....	2309 88	2309 88	849 21	3159 09	3159 09	1650 21	1509 88	959 67	
.....	566 00	566 00	.....	.....	566 00	.....	.....	566 00	
889 94	.....	737 31	158 38	895 69	.....	15 00	880 69	.....	Special Examiner and Referee of Titles.
213 68	1103 62	147 48	32 26	179 74	1075 43	.....	179 74	1088 62	
472 53	.....	472 53	.....	472 53	.....	30 28	442 25	.....	
1230 63	1703 16	1130 63	.....	1130 63	1603 15	150 00	980 63	1522 88	
716 55	.....	716 55	.....	716 55	.....	10 00	706 55	.....	
632 28	.....	540 98	39 50	580 48	.....	5 00	575 48	.....	
502 01	1850 80	498 57	.....	498 57	1795 50	38 71	459 86	1797 09	
.....	5263 92	5263 46	660 27	5923 73	5923 73	3074 07	2849 66	2189 85	
.....	925 00	925 00	.....	.....	925 00	.....	.....	925 00	
1700 43	.....	1288 73	397 87	1686 60	.....	67 75	1618 85	.....	Special Examiner and Referee of Titles.
813 05	2513 48	813 05	.....	813 05	2499 65	341 20	471 85	2104 53	
1950 54	.....	1189 54	745 33	1934 87	.....	174 78	1760 09	.....	
1871 66	3822 20	1123 96	750 82	1874 78	3809 65	677 95	1196 83	2969 47	
1212 05	.....	1099 50	19 70	1119 20	.....	451 00	668 20	.....	
2281 15	.....	2364 20	2 35	2366 55	.....	451 00	1915 55	.....	
1434 15	5027 35	1420 60	.....	1420 60	4906 35	451 00	969 60	3674 35	
.....	2403 14	1718 92	874 67	2593 59	3468 26	1023 03	1570 56	1380 13	
241 10	241 10	241 10	.....	241 10	241 10	.....	241 10	241 10	
343 50	.....	343 50	.....	343 50	.....	10 53	332 97	.....	
822 65	1166 15	816 33	.....	816 33	1159 83	23 41	792 92	1125 89	
426 06	.....	372 98	52 52	425 50	.....	20 00	405 50	.....	Special Examiner and Referee of Titles.
752 20	.....	728 20	.....	728 20	.....	.....	728 20	.....	
514 05	.....	509 50	92 20	601 70	.....	6 80	594 90	.....	
410 43	2102 74	351 18	78 05	429 23	2184 63	3 60	425 63	2072 34	
.....	5397 02	3342 82	634 76	3977 58	3977 58	2063 05	1914 53	3333 97	
.....	600 00	600 00	.....	600 00	.....	.....	600 00	.....	

APPENDIX L.—Schedule shewing Return of Fees and Emoluments of the

County or District.	County Town.	Office.	Officer.	Amount Earned.	Salary paid by the Government.
				$ c.	$ c.
Northumberland & Durham—*Con* ..	Cobourg	Local Master	Judge Clark..	1732 06	.....
		County Attorney.....	J. W. Kerr	329 60	... .
		Clerk of the Peace.....	"	1220 14	.....
		Local Registrar	John Fisher	126 70	750 00
		County Court Clerk.....	"	517 00	.....
		Surrogate Registrar.....	"	335 15	... ...
Ontario	Whitby.....	Sheriff.....	Thomas Paxton.....	4009 01	.....
		Surrogate Judge	Judge Burnham	Commuted at	
		Local Master	Judge Dartnell.....	996 05	.....
		County Attorney.....	J. E. Farewell	446 17	. ...
		Clerk of the Peace	"	1232 05	.... ..
		Local Registrar.....	L. T. Barclay.....	134 30	675 00
		County Court Clerk.....	"	846 00	.....
		Surrogate Registrar.....	"	590 20	.....
Oxford	Woodstock	Sheriff.....	George Perry.....	2525 25	... .
		Surrogate Judge	Judge Finkle.....	475 60	.....
		Local Master	H. B. Beard, Q.C.....	406 20	. .....
		Deputy Registrar	"	358 78	.....
		County Attorney.....	F. R. Ball, Q.C.....	224 20	.....
		Clerk of the Peace	"	728 12	.....
		Deputy Clerk of the Crown	James Canfield.....	343 10	450 00
		County Court Clerk.....	"	865 25	.....
		Surrogate Registrar.....	"	911 00	.....
Peel	Brampton	Sheriff.....	Robert Broddy.....	2524 28	.....
		Surrogate Judge	Judge Scott	Commuted at	
		Local Master	"	220 85	....
		County Attorney	W. H. McFadden	102 95	....
		Clerk of the Peace	"	668 53	.....
		Local Registrar....	J. A. Austin	121 35	600 00

* From date

different County Judicial Officers in the Province of Ontario, etc.—*Continued.*

Total Earnings and Salary.	Total Earnings and Salary by officer in all his offices.	Amount received for present year.	Amount received for previous years.	Total receipts.	Total receipts by officer from all his offices.	Amount disbursed.	Net amount received.	Net amount due to or received by officer by virtue of all his offices.	Remarks.
$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	
1732 06	2332 06	1320 06	501 96	1822 02	2422 02	414 00	1408 02	1918 06	Special Examiner and Referee of Titles.
329 60	.....	329 60	.....	329 60	.....	100 00	229 60	.....	
1220 14	1549 74	1220 14	.....	1220 14	1549 74	150 00	1070 14	1299 74	
876 70	.....	851 50	.....	851 50	.....	76 00	775 50	.....	
517 00	.....	183 25	.....	183 25	.....	210 00	.....	.....	Appointed 6th July, 1885.
335 15	1728 85	227 15	.....	227 15	1262 90	72 30	154 85	1370 55	
4009 01	4009 01	2931 49	1731 34	4662 83	4662 83	2312 76	2350 07	1696 25	
.....	540 00	540 00	.....	.....	540 00	.....	.....	540 00	
996 05	996 05	925 05	.....	925 05	925 05	25 00	900 05	971 05	Special Examiner and Referee of Titles.
446 17	.....	339 25	251 17	590 42	.....	176 37	414 05	.....	
1232 05	1678 22	739 42	527 16	1266 58	1857 00	309 79	956 79	1192 06	
809 30	.....	809 30	.....	809 30	.....	58 00	751 30	.....	
846 00	.....	801 90	8 60	810 50	.....	61 00	749 50	.....	
590 20	2245 50	558 65	6 00	564 65	2184 45	128 00	436 65	1998 50	
2525 25	2525 25	1902 13	1079 33	2981 46	2981 46	1125 99	1855 47	1399 26	
475 60	475 60	475 60	.....	475 60	475 60	.....	475 60	475 60	
406 20	.....	406 20	.....	406 20	.....	.....	406 20	.....	
358 78	764 98	358 78	.....	358 78	769 98	.....	358 78	764 98	Special Examiner and Referee of Titles.
224 20	.....	224 20	.....	224 20	.....	28 00	196 20	.....	
728 12	952 32	728 12	47 50	728 10	952 32	.....	728 10	924 32	
793 10	.....	768 10	.....	815 60	.....	.....	815 60	.....	
865 25	.....	654 25	776 11	830 36	.....	10 00	820 36	.....	
911 00	2569 35	646 45	197 65	844 10	2490 06	35 00	809 10	2524 35	
.....	2524 28	2077 53	561 47	2639 00	2639 00	1088 92	1550 08	1435 36	
240 00	.....	240 00	.....	240 00	.....	.....	240 00	.....	
220 85	460 85	162 85	.....	162 85	402 85	.....	162 85	402 85	Special Examiner and Referee of Titles.
102 95	.....	93 95	36 80	130 75	.....	25 00	105 75	.....	
668 53	771 48	544 22	89 74	633 96	764 71	50 00	583 96	696 48	
721 35	.....	720 95	1 00	721 95	.....	3 00	718 95	.....	

of appointment.

APPENDIX L.—Schedule shewing Return of Fees and Emoluments of the

COUNTY OR DISTRICT.	COUNTY TOWN.	OFFICE.	OFFICER.	Amount Earned.	Salary paid by the Government.
				$ c.	$ c.
Peel—*Continued* ..	Brampton	County Court Clerk.....	J. A. Austin.....	431 78	.....
		Surrogate Registrar	"	524 19	.....
Perth	Stratford	Sheriff.....	John Hossie.....	4168 80	.....
		Surrogate Judge	Judge Lizars.....	402 60	.....
		Local Master	"	855 10	.....
		County Attorney.....	John Idington, Q.C....	468 40	.....
		Clerk of the Peace.....	"	680 70	.....
		Local Registrar.....	Jas. McFadden.....	374 31	675 00
		County Court Clerk	"	869 93	.....
		Surrogate Registrar.....	"	582 91	.....
Peterboro'.....	Peterboro'.....	Sheriff.	James A. Hall	2157 02	.....
		Surrogate Judge	Judge Dennistoun.....	168 00	.....
		Local Master	C. A. Weller.....	939 61	.....
		Deputy Registrar	"	305 63	.....
		County Attorney	"	137 80	.....
		Clerk of the Peace.....	"	774 68	.....
		Deputy Clerk of the Crown	John Moloney.....	75 80	450 00
		County Court Clerk.....	"	1397 79	.....
		Surrogate Registrar	"	301 81	.....
Prescott & Russell.	L'Original	Sheriff.....	J. D. Merrick.....	2229 09	.....
		Surrogate Judge	Judge Daniell.	Commuted at	
		Local Master	"	202 12	.....
		County Attorney.....	John Maxwell.....	63 47	.....
		Clerk of the Peace.....	"	907 80	.....
		Local Master	John Fraser	88 50	675 00
		County Court Clerk.....	"	234 06	.....
		Surrogate Registrar ...	"	164 16	.....
Prince Edward ...	Picton.....	Sheriff.....	James Gillespie	2213 60	.....
		Surrogate Judge	Judge Jellett.....	139 00	.....
		Local Master.....	"	167 85	.....
		County Attorney.....	Philip Low, Q.C.....	26 28	....

different County Judicial Officers in the Province of Ontario, etc.—*Continued.*

Total Earnings and Salary.	Total Earnings and Salary by officer in all his offices.	Amount received for present year.	Amount received for previous years.	Total Receipts.	Total receipts by officer from all his offices.	Amount disbursed.	Net amount received.	Net amount due to or received by officer by virtue of all his offices.	Remarks.
$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	
431 78	.....	410 08	8 10	418 18	.....	11 95	406 23	.....	
524 19	1677 32	493 99	.....	493 99	1634 12	13 00	480 99	1649 37	
.....	4168 80	3465 20	916 87	4382 07	4382 07	1368 62	3013 45	2800 18	
402 60	.....	402 60	.....	402 60	.....	.....	402 60	.....	
855 10	1257 70	397 00	238 80	635 80	1038 40	110 00	535 80	938 40	Special Examiner and Referee of Titles.
468 40	.....	370 40	171 30	541 70	.....	23 65	518 05	.....	
680 70	1149 10	382 53	307 86	690 39	1232 29	266 50	423 89	858 95	
1049 31	.....	1049 31	.....	1049 31	.....	150 00	899 31	.....	
869 93	.....	849 93	.....	849 93	.....	150 00	699 93	.....	
582 91	2502 15	582 91	.....	582 91	2482 15	100 00	482 91	2102 15	
.....	2157 02	1979 16	64 44	2043 60	2043 60	296 88	1746 72	1860 14	
.....	168 00	168 00	.....	168 00	168 00	.....	168 00	168 00	
939 61	.....	939 61	.....	939 61	.....	.....	939 61	.....	Special Examiner and Referee of Titles.
305 63	.....	305 63	.....	305 63	.....	.....	305 63	.....	
137 80	.....	107 80	.....	107 80	.....	2 40	105 40	.....	
774 68	2157 72	678 03	.....	678 03	2031 07	3 50	674 53	2151 82	
525 80	.....	525 80	.....	525 80	.....	.....	525 80	.....	
1397 79	.....	1348 33	79 10	1427 43	.....	10 00	1417 43	.....	
301 81	2225 40	301 81	.....	301 81	2205 04	.....	301 81	2215 40	
.....	2229 09	1643 84	480 98	2124 82	2124 82	1139 87	984 95	1089 22	
120 00	.....	120 00	.....	120 00	.....	.....	120 00	.....	
202 12	322 12	69 15	.....	69 15	219 15	.....	69 15	322 12	Special Examiner.
63 47	.....	63 47	44 84	108 31	.....	12 50	95 81	.....	
907 80	971 27	844 30	.....	844 30	952 61	19 23	825 07	939 54	
763 50	.....	763 50	.....	763 50	.....	35 00	728 50	.....	
234 06	.....	220 76	38 10	258 86	.....	45 00	213 86	.....	
164 16	1161 72	164 16	.....	164 16	1186 52	50 00	114 16	1031 72	
.....	2213 60	1713 04	412 01	2125 05	2125 05	1261 17	863 88	952 43	
139 00	.....	139 00	.....	139 00	.....	.....	139 00	.....	
167 85	306 85	67 15	.....	67 15	206 15	3 00	64 15	303 85	
26 28	.....	26 28	.....	26 28	.....	8 00	18 28	.....	

APPENDIX L.—Schedule shewing Return of Fees and Emoluments of the

COUNTY OR DISTRICT.	COUNTY TOWN.	OFFICE.	OFFICER.	Amount Earned.	Salary paid by the Government.
				$ c.	$ c.
Prince Edw'd—*Con.*	Picton.....	Clerk of the Peace	Philip Low, Q.C	542 39	.....
		Deputy Clerk of the Crown	John Twigg	114 53	600 00
		County Court Clerk.....	"	350 40	.....
		Surrogate Registrar.....	"	345 47	.....
Rainy River.....	Rat Portage ..	Sheriff	John McQuarrie.....	125 50	.....
		Deputy Clerk of the Crown	Frank J. Apjohn.....	*nil.*	.....
		District Court Clerk	"	.....	.....
		Surrogate Registrar.....	"	.....	.....
Renfrew	Pembroke	Sheriff	James Morris	3149 84	.....
		Surrogate Judge	Judge Deacon	commuted at	
		Local Master	"	78 01	.....
		County Attorney	H. H. Loucks	257 95	.....
		Clerk of the Peace	"	790 24	.....
		Local Registrar.....	A. Thomson	221 65	600 00
		County Court Clerk.....	"	695 62	.....
		Surrogate Registrar.....	"	123 30	.....
Simcoe	Barrie	Sheriff	T. D. McConkey	8642 54	.....
		Surrogate Judge	Judge Ardagh	commuted at	
		Local Master	J. R. Cotter	823 05	.....
		Deputy Registrar	"	455 10	.....
		County Attorney	"	928 80	.....
		Clerk of the Peace	"	1916 44	.....
		Deputy Clerk of the Crown	J. McL. Stevenson	212 00	500 00
		County Court Clerk.....	"	1060 80	.....
		Surrogate Registrar.....	"	852 75	.....
Stormont, Dundas and Glengarry..	Cornwall	Sheriff	D. E. McIntyre	3233 03	.....
		Surrogate Judge	Judge Pringle	382 50	.....
		Local Master	"	688 41	.....
		County Attorney	James Dingwall	220 57	.....
		Clerk of the Peace	"	620 85	.....

different County Judicial Officers in the Province of Ontario.—*Continued.*

Total Earnings and Salary.	Total Earnings and Salary by officer in all his offices.	Amount received for present year.	Amount received for previous years.	Total receipts.	Total receipts by officer from all his offices.	Amount disbursed.	Net amount received.	Net amount due to or received by officer by virtue of all his offices.	Remarks.
$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	
542 39	568 62	273 61	.....	273 61	299 89	12 30	261 31	548 32	
714 53	....	714 53	18 44	732 97	.....	.....	732 97	.....	
350 40	.....	274 90	108 70	388 60	....	.....	383 60	.....	
345 47	1410 40	340 75	17 88	358 63	1475 20	.....	358 63	1410 40	
.....	125 50	2 20	.....	.....	.....	49 50	.....	76 00	* Appointed July, 1885.
.....	.....	.....	.....	.....	.....	.....	.....	.....	" "
.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	3149 84	3091 22	70 79	3162 01	3162 01	1441 27	1620 74	1708 57	
264 00	.....	264 00	.....	264 00	.....	.....	264 00	.....	
78 01	342 01	78 01	.....	78 01	342 01	.....	78 01	342 01	
257 95	.....	257 95	.....	257 95	.....	22 85	235 10	.....	
790 24	1048 19	760 24	30 00	790 24	1048 19	31 62	758 62	993 72	
821 65	.....	821 65	.....	821 65	.....	10 00	811 65	.....	
695 62	.....	695 62	.....	695 62	.....	10 00	685 62	.....	
123 30	1640 57	123 30	... .	123 30	1640 57	2 00	121 30	1618 57	
.....	8642 54	7648 31	1342 87	8991 18	8991 18	4736 29	4254 89	3906 25	
.....	479 00	.....	.....	.....	479 00	.....	479 00	479 00	
823 05	.....	823 05	.....	823 05	.....	43 00	780 05	....	
455 10	.....	455 10	.....	455 10	.....	35 00	420 10	....	Special Examiner and Referee of Titles.
928 80	.....	928 80	.....	928 80	.....	24 70	904 10	.....	
1916 44	4123 39	1916 44	.....	1916 44	4123 39	251 54	1664 90	3769 15	
712 00	.....	712 00	.....	712 00	.....	28 96	683 04	..... .	
1060 80	.....	1060 80	.....	1060 80	.....	89 25	971 55	.....	
852 75	2625 55	852 75	.....	852 75	2625 55	95 25	757 50	2412 09	
.....	3233 03	2653 64	270 57	2924 21	2924 21	1055 26	1868 95	2177 77	
382 50	.....	382 50	.....	382 50	.....	.....	382 50	.....	
688 41	1070 91	688 41	.....	688 41	1070 91	....	688 41	1070 91	Special Examiner and Referee of Titles.
220 57	.....	139 07	121 50	260 57	.....	18 00	242 57	.....	
620 85	841 42	395 36	242 63	637 99	898 56	23 55	614 44	799 87	

* From date of appointment only.

APPENDIX L.—Schedule shewing Return of Fees and Emoluments of the

COUNTY OR DISTRICT.	COUNTY TOWN.	OFFICE.	OFFICER.	Amount Earned.	Salary paid by the Government.
				$ c.	$ c.
Stormont, Dundas & Glengary.-*Con.*	Cornwall	Local Registrar	Alex. E. Macdonald	218 50	750 00
		County Court Clerk	"	731 69	
		Surrogate Registrar	"	450 55	
Thunder Bay	Port Arthur	Sheriff	J. F. Clarke	1911 00	1000 00
		Surrogate Judge	Judge Hamilton	14 50	
		Local Master	"	282 50	
		County Attorney	A. R. Lewis	845 97	
		Clerk of the Peace	"	493 71	
		Local Registrar	C. Kreissman	236 60	600 00
		District Court Clerk	"	624 12	
		Surrogate Registrar	"	17 60	
Victoria	Lindsay	Sheriff	John McLennan	1909 91	
		Surrogate Judge	Judge Dean	commuted at	
		Local Master	"	741 16	
		County Attorney	A. P. Devlin	150 10	
		Clerk of the Peace	"	662 00	
		Local Registrar	William Grace	225 00	675 00
		County Court Clerk	"	610 00	
		Surrogate Registrar	"	320 00	
Waterloo	Berlin	Sheriff	Moses Springer	2331 99	
		Surrogate Judge	Judge Miller	commuted at	
		Local Master	Judge Lacourse	734 00	
		County Attorney	W. H. Bowlby	281 80	
		Clerk of the Peace	"	1175 53	
		Local Registrar	John McDougall	214 96	1075 00
		County Court Clerk	"	360 14	
		Surrogate Registrar	A. J. Peterson	607 33	
Welland	Welland	Sheriff	George J. Duncan	2570 31	
		Surrogate Judge	Judge Baxter	452 10	
		Local Master	"	122 53	

different County Judicial Officers in the Province of Ontario.—*Continued.*

Total Earnings and Salary.	Total Earnings and Salary by officer in all his offices.	Amount received for present year.	Amount received for previous years.	Total receipts.	Total receipts by officer from all his offices.	Amount disbursed.	Net amount received.	Net amount due to or received by officer by virtue of all his offices.	Remarks.
$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	
968 50	.....	968 50	.....	968 50	.....	20 00	948 50	.....	
731 69	.....	574 44	.....	574 44	.....	13 47	560 99	.....	
450 55	2150 74	450 55	.....	450 55	2150 74	41 29	409 26	2075 98	
2911 00	2911 00	2536 00	75 00	2611 00	2611 00	1205 00	1406 00	1706 00	
14 50	.....	14 50	.....	14 50	.....	.....	14 50	.....	
282 50	297 00	282 50	.....	282 50	297 00	41 80	240 70	255 20	
845 97	.....	264 49	145 25	409 74	.....	.....	409 74	.....	
493 71	1339 68	219 30	4 00	223 30	633 04	103 00	120 30	1236 68	
836 60	.....	836 60	.....	836 60	.....	2 00	834 60	.....	
624 12	1460 72	569 12	43 90	613 02	1449 62	199 25	413 77	1259 47	
17 60	.....	15 50	.....	15 50	.....	1 50	14 00	.....	
1909 91	1909 91	1170 87	.....	1170 87	1170 87	708 56	362 31	1201 35	Appointed 30th April, 1885.*
500 00	.....	500 00	.....	500 00	.....	.....	500 00	.....	
741 16	1241 16	741 16	.....	741 16	1241 16	.....	741 16	1241 16	Special Examiner and Referee of Titles.
150 10	.....	106 70	.....	106 70	.....	.....	106 70	.....	
662 00	812 10	646 88	.....	646 88	753 58	.....	646 88	812 10	
900 00	.....	705 00	12 00	717 00	.....	17 00	700 00	.....	
610 00	.....	517 00	119 00	636 00	.....	46 00	590 00	.....	
320 00	1830 00	295 00	26 00	321 00	1674 00	37 50	283 50	1729 50	
.....	2331 99	2055 39	417 84	2473 23	2473 23	897 29	1575 94	1434 70	
.....	704 00	.....	.....	.....	704 00	.....	.....	704 00	
.....	734 00	644 00	.....	644 00	644 00	11 00	633 00	723 00	Special Examiner and Referee of Titles.
281 80	.....	281 80	281 80	563 60	.....	.....	563 60	.....	
1175 53	1457 33	1175 53	.....	1175 53	1739 13	400 00	775 53	1057 33	
1289 96	.....	1289 96	.....	1289 96	.....	10 00	1279 96	.....	
360 14	1650 10	360 14	.....	360 14	1650 10	10 00	350 14	1630 10	
607 33	607 33	607 33	.....	607 33	607 33	113 70	403 63	493 63	
2570 31	2570 31	1962 31	.....	1962 31	1962 31	1102 32	859 99	467 99	
452 10	.....	452 10	.....	452 10	.....	.....	452 10	.....	
122 53	574 63	37 23	84 47	121 70	573 80	.....	121 70	574 63	

* From date of appointment only.

APPENDIX L.—Schedule shewing Return of Fees and Emoluments of the

COUNTY OR DISTRICT.	COUNTY TOWN.	OFFICE.	OFFICER.	Amount earned.	Salary paid by the Government.
				$ c.	$ c.
Welland—*Con.* ..	Welland	County Attorney.....	L. D. Raymond	408 51	.....
		Clerk of the Peace	"	872 25	.....
		Local Registrar.....	I. P. Willson.....	271 80	1000 00
		County Court Clerk	"	341 05	.....
		Surrogate Registrar	D. D. Everardo	719 74	.....
Wellington.....	Guelph	Sheriff.....	Hon. P. Gow.....	4003 57	.....
		Surrogate Judge	Judge Drew	commuted at	
		Local Master	A. M. McKinnon.....	938 17	.....
		Deputy Registrar	"	368 17	.....
		County Attorney.....	H. W. Peterson	431 00	.....
		Clerk of the Peace	"	1695 00	.....
		Deputy Clerk of the Crown	James Hough	80 40	500 00
		County Court Clerk.....	"	948 62	.....
		Surrogate Registrar	Alex. Mackenzie	904 00	.....
Wentworth.....	Hamilton.....	Sheriff.....	Hon. A. McKellar	5106 72	.....
		Surrogate Judge	Judge Sinclair.....	commuted at	
		Local Master and Deputy Registrar	Miles O'Reilly, Q.C....	commuted at	
		Local Master	J. E. O'Reilly.....		
		County Attorney	John Crerar	1363 50	.....
		Clerk of the Peace	"	743 80	.....
		Deputy Clerk of the Crown	S. H. Ghent	697 06	500 00
		County Court Clerk.....	"	1384 75	.....
		Surrogate Registrar	"	878 20	.....
York	Toronto	Sheriff.....	F. W. Jarvis.....	20048 96	.....
		Surrogate Judge	Judges Boyd and McDougall	1641 50	....
		"	Judges McDougall and Morgan	.....	666 00
		County Attorney.....	F. Fenton.....	4289 06	.....
		Clerk of the Peace	T. H. Bull	2870 33	.....
		Surrogate Registrar.....	J. G. Brown	3043 10	.....
		County Court Clerk.....	Walter McKenzie	4151 95	.....

different County Judicial Officers in the Province of Ontario.—*Continued.*

Total Earnings and Salary.	Total Earnings and Salary by officer in all his offices.	Amount received for present year.	Amount received for previous years.	Total receipts.	Total receipts by officer from all his offices.	Amount disbursed.	Net amount received.	Net amount due to or received by officer by virtue of all his offices.	Remarks.
$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	
408 51	.....	329 51	91 00	420 51	.....	34 76	386 25	.....	
872 25	1280 76	805 88	312 77	1118 65	1539 16	21 37	1097 28	1225 13	
1271 80	.....	1264 10	1 15	1265 25	.....	34 08	1231 17	.....	
341 05	1612 85	328 65	8 65	337 30	1605 55	8 45	328 85	1570 32	
719 74	719 74	616 89	61 80	678 69	678 69	278 63	400 06	441 11	
.. .. ..	4003 57	3567 98	809 38	4377 36	4377 36	1751 52	2625 84	2252 05	
.....	505 00	505 00	.....	.....	505 00	.....	.....	505 00	
938 17	.....	683 53	192 31	875 83	.....	12 50	863 33	.....	
368 17	1306 34	265 18	137 35	402 53	1278 36	12 50	390 03	1281 34	
431 00	.....	361 00	82 30	443 30	.....	105 00	338 30	... .	
1695 00	2126 00	1625 00	605 13	2230 13	2673 43	410 00	2263 43	1611 00	
580 40	.....	580 40	.....	580 40	.....	1 05	579 35	.....	
948 62	1529 02	944 05	2 40	946 45	....	523 80	422 65	1004 17	
904 00	904 00	824 11	201 55	1025 66	2552 51	....	1025 66	904 00	
.....	5106 72	3947 48	827 49	4774 97	4774 97	2485 99	2288 98	2620 73	
.....	1000 00	1000 00	.....	.....	1000 00	.....	.....	1000 00	
.. ..	4500 00	4500 00	.....	.....	4500 00	.....	.....	4500 00	Special Examiners and Referees of Title.
1363 50	.....	1177 50	152 00	1329 50	.....	100 00	1229 50	.....	
743 80	2107 30	427 05	336 62	763 67	2093 17	150 00	613 67	1857 30	
1197 06	.....	1112 86	53 48	1166 34	..... .	.....	1166 34	.....	
1384 75	.....	1174 20	86 95	1261 15	.....	143 00	1118 15	.....	
878 20	3460 01	878 20	.....	878 20	3315 69	140 00	738 20	3177 01	
.....	20048 96	20048 96	486 30	....	20535 26	11287 66	9247 60	8761 30	
.....	1641 50	1641 50	.....	.....	1641 50	.....	.....	1641 50	
.....	666 00	666 00	.....	.... .	666 00	.....	.....	666 00	
.....	4289 06	3499 96	799 61	4299 57	4299 57	1502 46	2797 11	2786 60	
.....	2870 33	1985 66	784 11	2769 77	2769 77	500 00	2269 77	2370 33	
.....	3043 10	3003 05	40 05	3043 10	3043 10	413 45	2629 65	2629 65	
.....	4151 95	4109 00	43 25	4152 25	2160 38	1246 04	2706 21	2117 13	and $745.83 to the Provincial Treasurer.

(No. 79).

Statement of the Assets, Liabilities, Revenue, etc., of the Municipalities within the several Counties in the Province for the year 1884. (*Not printed*).

(No. 80).

Return of copies of the judgment given by the Honourable Mr. Justice Proudfoot in the case of McArthur *v.* the Queen, and of the pleadings and evidence in the case, and all correspondence and Orders in Council relating to the claim of Peter Alexander McArthur, or any other person, to the timber limit in question in the case, together with an estimate of the value of the limit. (*Not printed*).

(No. 81).

Return shewing the number of Men, Widows, and Unmarried Women who availed themselves of the Franchise at the Municipal Elections of 1885-6, together with the total number of Male and Female voters respectively on the Voters' Lists of each Municipality in the Province. (*Not printed*)

RETURN

To an Order of the Legislative Assembly passed on the 3rd day of March, 1886, for a Return shewing the number of persons in each County committed to gaol by the County Court Judges during the years 1884 and 1885, for default of payment under an order of the Division Court.

ARTHUR S. HARDY,

Secretary.

Office of the Provincial Secretary,
Toronto, March 23rd, 1886.

RETURN to an Order of the Legislative Assembly dated 3rd March, 1886, shewing the number of persons in each County committed to gaol by the County Court Judges during the years 1884 and 1885, for default of payment under an order of the Division Court.

NAME OF COUNTY.	Persons Committed.		REMARKS.
	1884.	1885.	
Algoma District			
Brant			
Bruce	2	2	
Carleton	8	3	
Dufferin	4		No return for 1885.
Elgin	6	5	
Essex	1		No return for 1885.
Frontenac			
Grey	1		No return for 1885.
Haldimand			
Haliburton			
Halton	3	1	
Hastings			
Huron			
Kent	7	7	
Lambton	2	3	
Lanark			
Leeds and Grenville	2	4	
Lennox and Addington	4	5	
Lincoln	1	2	
Middlesex	11	8	
Norfolk	2		No return for 1885.
Northumberland and Durham	3	1	
Ontario			
Oxford	3	5	
Peel		4	
Perth	6	9	
Peterborough			
Prescott and Russell		2	
Prince Edward	1	2	
Renfrew	2	5	
Rainy River District			
Simcoe	6	11	
Stormont, Dundas and Glengarry			
Thunder Bay District			
Victoria	2	2	
Waterloo			
Welland	4	5	
Wellington	1	1	
Wentworth			
York	4	4	

(No. 83).

Return of copies of all letters and correspondence between any and all members or officers of the Government of Ontario, and any party or parties interested in the capital stock of the Massey Manufacturing Company, or the contemplated increase thereof, in reference to such proposed increase. (*Not printed*).

(No. 84).

Return of copies of all rules and regulations in force at the University of Toronto, with regard to the admission of visitors to the Library, Museum and Tower. (*Not printed*).

REPORT

Of the Honourable the Commissioner of Agriculture for the Province of Ontario, for the year ending 31st December, 1885.

Presented to the Legislature by Command of His Honour the Lieutenant-Governor.

ARTHUR S. HARDY,
Secretary.

Provincial Secretary's Office,
23rd March, 1886.

REPORT

OF THE

COMMISSIONER OF AGRICULTURE.

To the Honourable John Beverley Robinson,
Lieutenant-Governor of Ontario:

Sir,—As Commissioner of the Department of Agriculture it is my pleasing duty to report to Your Honour a growing interest in all matters which relate to the agricultural affairs of the Province.

In the cultivation of the soil, the growth of field crops, the care and breeding of live stock, the production of meat, butter and cheese, the planting and fruiting of orchards, vineyards and gardens, and in all the varied pursuits of rural life, there are manifold proofs of intelligent enquiry and solid progress before us.

These are, no doubt, results of our increasing wants as a country in which the conditions of pioneer life are passing away, but they are also results of great change in the conditions of the agriculture of the world.

Fifteen years ago the United States and Canada supplied Great Britain with a very large proportion of her breadstuffs, and at that time exports from Australasia and British India had hardly begun.

In 1869, while the United States sent 15,320,000, and Canada 3,396,000 cwt. of wheat, Australasia sent only 265,000, and India only 1,941 cwt.

At the present day Canada ships less wheat to Britain than in 1869, and she has been overtaken by Australasia; whereas the supplies from British India are now about four times more than Canada's were in 1869, and that country stands with Russia as second to the United States in the supply of wheat for the British consumer.

In the United States the wheat area has been very largely increased by the growth of settlement in the Mississippi valley, and on the Pacific coast; and as a consequence of the great production in that country, in Russia and in India, wheat and flour have become a drug in the British and other European markets.

It is not unlikely, however, that in due time the supply will adapt itself to the demand, and that prices will rise to a figure that may again give to the growers of wheat a margin of profit. In the meantime it is fortunate that the farmers of Ontario are not relying on wheat as their only, or even as their chief product.

The attacks of insect enemies thirty years ago, although the cause of very serious loss at the time, taught a lesson of great value. Wheat ceased to be the staple crop of the country, and a career of mixed husbandry was entered upon, the wisdom of which has never been more apparent than at the present time.

As an article of export barley is now of greater importance than wheat, and butter and cheese than either. Our annual exports of cattle and sheep greatly exceed in value those of wheat and flour, although it is only ten years ago that shipments of cattle and sheep began to be made to Britain.

For the fiscal year 1885 the total value of our exports under those two heads was $8,638,848, while the value of wheat and flour exports was only $2.522,817. Even in such an apparently insignificent article as eggs our exports for 1885 are valued in the Trade Returns at $1,830,632, and of this amount, $1,234,714 is credited to Ontario. In 1869 the total value of our egg exports was only $188,249.

These facts serve to illustrate what I have said of the advance made in mixed husbandry in our country ; and, as a consequence, how well prepared our farmers are to stand a drop in the market price of one product, or a loss caused by the failure or disease of another.

The potato rot in Ireland in 1847 was a calamity to the people of that country, because the potato crop was their staple. The same disease appeared in Ontario during the past season, I regret to say, and about one-third of the crop has been destroyed by it ; yet, in so far as the food supply and the general well-being of our people are concerned, the effect is hardly apparent.

To instance the importance of our agricultural industry I may state that for the past four years, in spite of the depressed state of foreign markets, the average annual value of our wheat, barley, oats, rye and pease crops was $70,000,000, or about eleven per cent. of the value of the farm land of the Province. For the past year the value of our grain, hay and root crops, computed on the average market prices of the Province, was nearly $116,-000,000, or eighteen and one-half per cent. of the value of the farm land.

These are large results, in spite of over-stocked markets and the low range of prices; and especially when account is taken of the country's fruit crop, of its dairy industries, and of its live stock.

The dairymen of Ontario have earned for themselves an enviable reputation in the English markets for the superior quality of their cheese, and although last year's trade was dull, and the prices were low, there is no cause for despondency. So long as an article of prime quality is produced—and I sincerely trust that the spirit of indifference which appears to have possessed cheese-makers in other countries will not take hold of dairymen here—Ontario may hope to steadily expand her trade, and year by year reach new markets with her product.

The European consumption is very large, and with the skill and energy that have hitherto marked Canadian makers and dealers they cannot fail to keep the place they have won in supplying the demand. A trade that has grown from $549,572 in 1869 to $8,265,240 in 1885 is too valuable to be lost by neglect or failure to keep up with the requirements of the market ; and knowing the active and intelligent interest taken by

members of the two Dairymens' Associations of this Province in all that appertains to the industry, I look forward with confidence to its unchecked development.

Our butter trade, unfortunately, has been falling off to a serious extent. For the last three years the average value of exports has been only a little more than one-half of the average for the preceding twelve years. This result is generally attributed to the poor quality of the product, as compared with the butter of European countries; and it is a fact deserving of our notice and our thoughtful consideration that during the past fifteen years great interest has been taken in the management of dairies, and a corresponding improvement has been shown in butter-making processes, especially in Denmark, Germany and the Netherlands.

I am pleased to observe, however, that in Ontario a keener sense of the importance of the butter industry is exhibiting itself; and there is reason to hope that—with the influence of the creamery established at the Agricultural College, of similar concerns in different parts of the Province operated by joint stock companies or under private management, of the Creamery Association that has just been organized, and of the literature on the subject given to the public through the reports of the Agricultural College and of the Dairymen's Associations—the butter industry of the country will not only speedily regain its former place, but will make for the Province an established and enduring reputation in the markets of the world.

I have referred to the growth of our export trade in live stock. It has grown in value from $2,010,753 in 1868, to $10,376,235 in 1885. The figures are worthy of being presented in detail.

Classes.	1868.		1885.	
	Number.	Value.	Number.	Value.
		$		$
Horses	7,175	590,054	11,978	1,554,629
Horned cattle	44,442	1,099,940	143,003	7,377,777
Swine	10,902	42,858	1,652	7,283
Sheep	102,433	233,615	335,043	1,261,071
Poultry and other animals	.....	44,286	.....	175,475

Of these exports sixty per cent. went to Great Britain in 1885, and taking cattle alone, $5,572,248 in declared value went to that country.

The competition in the British markets, however, has been growing keener within the last two or three years, owing chiefly to the imports of preserved meats from Australia and New Zealand, and prices have fallen in consequence.

In Ontario the value of live stock last year was $3,000,000 less than in 1884, according to returns made by farmers, and a similar depreciation is reported in other countries.

In the United States, as shown by the reports of the Department of Agriculture at Washington, the aggregate valuation is less than in 1884 by $102,709,000, although

there has been an increase in the numbers of all live stock excepting sheep. In the State of Ohio, according to the same authority, the valuation is less by $16,000,000, and in Michigan it is less by $5,000,000.

It is not surprising, therefore, that while there has been an increase in the numbers of live stock in Ontario during the past two years, with the exception of sheep and hogs, there has been a reduction of $3,000,000 in the reported values.

It is desirable that we should know, with as much accuracy as possible, the agricultural situation of the country, and that every reasonable effort should be made to present facts, methods and processes for the guidance and instruction of all who are engaged in the noble pursuit of agriculture. It has been the constant aim of my Department to make enquiries and collect information that will aid in the continued development and prosperity of the agricultural interest of the Province ; and one of the most gratifying features of the past year, which may be claimed as the fruit of this endeavour, has been the organization of a number of Farmers' Institutes throughout the country, at whose meetings valuable papers have been read, and discussions have taken place the results of which it would be hard to over-estimate in their influence upon the agriculture of the future.

The Agricultural College, the Agriculture and Arts Association, the Electoral District, Township and Horticultural Societies, the Fruit Growers' Association, the Entomological Society, the Poultry Association, the Dairymen's Associations, and the Bureau of Industries have each in its respective sphere contributed to advance the interests of agriculture in the Province, and I have great pleasure in presenting to your Honour the results of their work and the fruits of their industry for the past year.

Respectfully submitted.

A. M. ROSS,
Commissioner of Agriculture.

Toronto, March 23, 1886.

RETURN

To an address to His Honour the Lieutenant-Governor, praying that there be laid before the Legislative Assembly a copy of the Order in Council disallowing the Statute of the Western University of London, Ontario, establishing a Faculty of Law in connection with the University, and of all reports upon which the Order in Council was based, and copies of all correspondence between the Minister of Education or any member of the Government, or any Departmental Officer and any person in reference to the establishment of the Faculty or the disallowance of the Statute.

Presented to the Legislative Assembly by Command of His Honour the Lieutenant-Governor.

ARTHUR S. HARDY,
Secretary.

Provincial Secretary's Office,
Toronto, March, 1886.

LONDON, 27th June, 1881.

MY DEAR SIR,—May I request of you the favour of laying the accompanying documents in reference to the Western University, before His Honour the Lieutenant-Governor in Council, at the earliest opportunity.

By returning the Deed to me you will greatly oblige,

Yours, etc.,

I. HURON.

The Honourable
THE PROVINCIAL SECRETARY.

LONDON, June 27th, 1881.

MY DEAR SIR,—With reference to the accompanying application to His Honour the Lieutenant-Governor in Council, under the tenth section of the Act of Incorporation of the Western University, I have further to state that this College, with the University powers conferred by the Act, intends to apply as soon as the Order in Council now applied for is granted, for affiliation with the University of Toronto in respect of its Faculties of Arts, Law and Medicine.

Yours, etc.,

I. HURON,
Chancellor.

The Honourable
A. S. HARDY,
Provincial Secretary.

THE WESTERN UNIVERSITY OF LONDON, ONT.

To His Honour
The Honourable JOHN BEVERLEY ROBINSON,
Lieutenant-Governor of the Province of Ontario.

The Petition of the undersigned Corporation, being the Western University of London, Ontario, respectfully showeth:—

1. That your petitioners were incorporated by the Act of the Legislature of Ontario, passed in the forty-first year of Her Majesty's reign, chapter 70, and established as a College with University powers, and invested with all necessary capacities for carrying out such objects.

2. That by section 10 of the said Act any University powers or privileges granted for conferring degrees cannot be exercised until it has been made to appear to the satisfaction of your Honour in Council that the sum of one hundred thousand dollars at the least has been raised in properties, securities or money, including Huron College when affiliated thereto, and is held for the purposes of the University.

3. That by Indenture, dated the 24th day of June, one thousand eight hundred and eighty-one, and duly made and entered into by Huron College and your petitioners, it was amongst other things agreed that Huron College should become, and it was thereby affiliated with the Western University, and was constituted the Faculty of Divinity thereof, and in and by the said Indenture all the property and securities of Huron College, amounting in value to the sum of ninety-five thousand five hundred dollars, was placed in trust for the purposes of the University, as in the said Indenture declared, a duplicate of which said Indenture is hereby annexed.

3. That your petitioners are also now possessed of the property, securities and money set forth in the schedule annexed to this petition, amounting in value to the sum of fifty-three thousand three hundred and ninety-five dollars, and which is also held for the purposes of the University.

5. That your petitioners' financial position is, therefore, such as should satisfy your Honour in Council that the conditions of the tenth section of the Act have been complied with, wherefore your petitioners respectfully pray your Honour that an Order in Council be passed to declare the same accordingly.

I. HURON,
Chancellor of the Western University.

SCHEDULE OF PROPERTY (OTHER THAN HURON COLLEGE PROPERTY) REFERRED TO IN THE PETITION HEREUNTO ANNEXED.

1. Real estate purchased from Hellmuth College in the City of London for	$67,000 00	
Less mortgage thereon	21,890 00	
		$45,150 00
2. Promissory notes uncollected		6,645 00
3. Cash in hand		1,600 00
Total		$53,395 00

CANADA :

CITY OF LONDON, To wit : I, the Right Reverend Isaac Hellmuth, Lord Bishop of the Diocese of Huron, do hereby solemnly and sincerely declare as follows:—

1. I am the Chancellor of the Western University of London, Ontario, and have a personal knowledge of the facts set forth in the petition of the said University, hereto annexed.

2. The several matters of fact set forth in the said annexed petition, are respectively true in substance and in fact.

And I make this solemn declaration, conscientiously believing the same to be true, and by virtue of an Act passed in the thirty-seventh year of the reign of Her Majesty Queen Victoria, entitled, "An Act for the suppression of voluntary and extra-judicial oaths."

Declared before me, at the City of London, in the Province of Ontario, this 27th day of June, A.D. 1881.

EDMUND BAYNES REED,
A Commissioner, etc.

I. HURON,
Chancellor,
Bishop of Huron.

ONTARIO,
COUNTY OF MIDDLESEX, To wit : I, Verschoyle Cronyn, of the City of London, in the County of Middlesex, Solicitor, and Bursar of Huron College, do solemnly declare :—

1st. That I have been solicitor and bursar of Huron College since its commencement in the year one thousand eight hundred and sixty-three ; I keep the accounts of the College, and have the custody of all the securities and moneys of the College.

2nd. I am well acquainted with the value of real estate in this city and neighbourhood.

3rd. That the real estate of Huron College consists of the block of land on which the College buildings stand, and, in my opinion, is worth in cash at least thirty-five thousand dollars, and would I think bring that amount at a forced sale by auction.

4th. The furniture and library of the said College are worth at least two thousand five hundred dollars.

5th. The mortgages and stocks in my hands, held for the use of the said College, are of the cash value of fifty-eight thousand dollars at the least.

6th. The above-mentioned property, real and personal, is unincumbered, and is, in my opinion, of the cash value of ninety-five thousand five hundred dollars.

And I make this solemn declaration, conscientiously believing the same to be true, and by virtue of the Act passed in the thirty-seventh year of Her Majesty's reign, entitled, "An Act for the suppression of voluntary and extra-judicial oaths."

Subscribed and declared before me at the City of London, in the County of Middlesex, this 25th day of June, A.D. 1881.

F. P. BETTS, A Commissioner, etc.

V. CRONYN.

THIS INDENTURE, made in duplicate the twenty-fourth day of June, one thousand eight hundred and eighty-one,

Between Huron College, herein called "the College," of the one part,

and

The Western University of London, Ontario, herein called "the University," of the other part.

Whereas, by the ninth section of the Act of incorporation of the University (41 Vic. cap. 70), Huron College is authorized at any time to become affiliated to the University, so as to constitute the Faculty of Divinity thereof, upon such terms as the College under and subject to the constitution governing the same, and the University may agree upon.

And whereas, at a meeting of the Council of the College, held on the twentieth day of May, one thousand eight hundred and eighty-one, the report of the Committee on Affiliation with the Western University was unanimously adopted, which recommended that Huron College should affiliate with the University, and that as soon as the University was opened and prepared to receive students, that all the property of Huron College should be held in trust, to hand over to the University the entire income and resources of the College, less the cost of management, repairs and any other necessary expenses to be applied by the University in providing and maintaining an efficient Faculty of Divinity in the University, but only so long as such Faculty is maintained to the satisfaction in all things of the Council of Huron College, the right being reserved to Huron College to cancel such trust at any time, and to resume the control of its property, income and resources,

And whereas, in the schedule hereto annexed is contained a general statement of the property of Huron College which is intended to be subjected to the terms of the hereinbefore mentioned trust, and the value of which is estimated to be ninety-five thousand five hundred dollars.

And whereas, the University on its part has agreed to such affiliation of Huron College with the University, and to the College being constituted the Faculty of Divinity in the University, and also, to the terms and conditions upon which the trusts of the said property of Huron College are to be held, as hereinbefore recited.

And whereas both parties are willing to enter into a formal agreement to that effect under their corporate seal.

Now these Presents witness, and it is hereby declared and agreed upon by and between the said parties of the first and second parts, and their respective successors and assigns, as follows:—

First.—That Huron College is hereby affiliated to the Western University of London, Ontario, so as to constitute the Faculty of Divinity in the said University.

Secondly.—That all the property, both real and personal, contained in the said schedule is held by Huron College in trust, the entire income thereof, after payment of the expenses of management, repairs and any other necessary expenses, to go and be paid to the University for the maintenance of the said Faculty of Divinity, so long as said Faculty is maintained to the satisfaction in all things of the Council of Huron College.

Thirdly.—That the right is reserved by and guaranteed to Huron College at any time hereafter upon six months previous notice to the University, to revoke these presents and the trusts hereby declared, and resume the control of said property, its income and resources as of their first and former estate.

Fourthly.—That nothing herein contained shall be taken or held to limit or in any way hinder the sale and conveyance by Huron College of any of the said property, but the proceeds of any sale or sales thereof made shall be held upon the trusts aforesaid, the income derived from the investment thereof to be paid to the University for the maintenance of the said Faculty.

Fifthly—That the Very Reverend Michael Boomer, at present Principal and Divinity Professor of Huron College, shall be the first Dean and Divinity Professor of the said Faculty.

In witness whereof, the President and the Secretary of Huron College have hereunto set their hands, and affixed the corporate seal of the College, and the Chancellor and the Secretary of the Western University of London, Ontario, have hereunto set their hands and affixed the corporate seal of the University.

Signed, sealed and delivered, in presence of

(Signed) EDWARD BAYNES REED.

(Signed) I. HURON, President. [L. S.]

(Signed) V. CRONYN, Secretary.

I. HURON, Chancellor. [L. S.]

JOHN GEMLEY, Secretary. [L. S.]

SCHEDULE OF PROPERTY HELD FOR THE USE OF HURON COLLEGE.

1. The College grounds and buildings in the City of London, bounded on the north by Grosvenor street, on the south by St. James street, on the east by George street, and on the west by the River Thames, comprising about 14 acres of land, the cash value of which is	$35,000 00
2. Library and furniture in College	2,500 00
3. Present cash value of mortgages and stocks held for the use of the College	58,000 00
	$95,500 00

I. HURON.

4th DAY OF JULY, 1881.

Upon consideration of the report of the Honourable Mr. Crooks, the Attorney General *pro tempore*, dated the 30th day of June, 1881, respecting the application of the Western University, of London, Ontario, under the tenth section of its Act of Incorporation (41 Victoria, cap. 70), the Lieutenant-Governor, by and with the advice of the Executive Council, hereby declares that having regard to the condition of the said tenth section of the said Act, it has been made to appear to the satisfaction of the Lieutenant-Governor in Council that the sum of one hundred thousand dollars at the least has been raised for the purposes of the said University in property, securities and moneys, including Huron College now affiliated thereto, and is held for the purposes of the said University.

Certified,

J. G. SCOTT,
Clerk Executive Council,
Ontario.

6th July, 1881,

My Lord,—I am directed herewith to transmit for your Lordship's information a copy of an Order in Council, approved by His Honour the Lieutenant-Governor, relative to the incorporation of the Western University of London, Ontario.

As requested by your Lordship, I have the honour to return the deed of affiliation.

I have, etc.,

GEO. E. LUMSDEN,
Asst.-Secretary.

The Right Reverend,
The Bishop of Huron,
Norwood House,
London.

London, Sept. 5, 1881.

To the Provincial Secretary
For the Province of Ontario.

Dear Sir,—Some two months since His Lordship the Bishop of Huron presented a petition from the Medical Faculty of the Western University to the Lieutenant-Governor in Council, setting forth certain requisitions pertaining to the staff of the Medical Department of the University. Circumstances are such as to make it very desirable that an answer to the petition should be given at as early as possible a day, and on this account I have been compelled to trouble you. May I ask the favour of an early reply?

Your obedient servant,

JNO. A. STEVENSON, M.D.,
Secretary Medical Faculty.

Provincial Secretary's Office,
Toronto, 6th September, 1881.

Sir,—I have the honour to acknowledge receipt of your letter of 5th instant, asking an early reply to a petition presented through His Lordship the Bishop of Huron, from the Medical Faculty of the Western University, setting forth certain matters pertaining to the staff of the Medical Department of the University, and to inform you in reply that there is no record in this Department of any such petition being received. Enquiry has been made at the Departments of the Attorney-General and the Hon. the Minister of Education, with a like result.

I have the honour to be, Sir,
Your obedient servant,

R. S. BRODIE,
Acting Assistant-Secretary.

T. A. Stevenson, Esq., M.D.,
Secretary Medical Faculty,
Western University,
London.

STATUTE TO ESTABLISH A FACULTY OF LAW IN CONNECTION WITH THE WESTERN UNIVERSITY AND COLLEGE, OF LONDON, ONTARIO.

Whereas, it is deemed desirable to establish a Faculty of Law in connection with the Western University and College, of London, Ontario;

1. Be it enacted by the Senate of the said University and College:—

That in accordance with the powers contained in the Acts incorporating the Western University and College, of London, Ontario, and in order to provide further facilities for instruction in Law, there is hereby established a School of Law, to be known as "The London Law School."

2. The Faculty of the said Law School hereby established shall consist of the following persons, namely:—

His Honour Judge Elliot, Dean of the Faculty.
W. H. Bartram, Esquire, Registrar.
W. W. Fitzgerald, Esquire, Bursar.

And the following gentlemen:—

W. P. R. Street, Esquire, Q.C., Equity Jurisprudence.
Hon. David Mills, International Law, and Rise of Representative Institutions.
J. H. Flock, Esquire, Criminal Law.
James Magee, Esquire, Real Property.
M. D. Fraser, Esquire, Personal Property.
J. F. Hellmuth, Esquire, Constitutional History.
W. R. Meredith, Esquire, Q.C., Municipal Corporations.
G. C. Gibbons, Esquire, Law of Contracts,

who are hereby appointed as Professors and Lecturers in the said Law School, with such others as may from time to time hereafter be appointed as hereinafter provided.

3. That inasmuch as no provision has been made for the representation of the said Faculty on the Senate of the said University and College, it is hereby declared that the said Faculty shall be a self-governing body in all matters relating to the said School of Law, and shall have full power from time to time to fix the number of Professors and Lecturers in the said Faculty, and the fees payable for instruction; and also to make rules and regulations respecting the course of study and the subjects of examination for any degree, honour or scholarship in the said Faculty, and to appoint all examiners for such purposes; provided, that such rules and regulations shall, in so far as circumstances will, in the opinion of the said Senate permit, be similar to those now in force for the like purposes in the University of Toronto, to the end that the standard of qualification in the said Western University and College may not be inferior to that which now prevails for a like degree or honour in the said University of Toronto; and provided, also, that no act done by the said Faculty shall conflict with the powers given to the Senate by the said Acts of Incorporation.

4. All appointments in the said Faculty shall be made by the Chancellor or Vice-Chancellor of the said University and College in accordance with the recommendation of the said Faculty for the time being.

5. The said Faculty shall have full power through the Chancellor or Vice-Chancellor to remove any member or members of the Faculty, and appoint another or others in place thereof, in accordance with the rules and regulations of the said Faculty then in force.

6. All communications respecting the removal or appointment of any member or members of said Faculty, and all recommendations for the conferring of degrees shall be sent to the Chancellor or Vice-Chancellor of said University and College, in writing, signed by the Dean and Registrar of said Faculty, and such communications and recommendations shall be complied with and acted upon forthwith by said Chancellor or Vice-Chancellor.

7. An authenticated copy of all by-laws, rules and regulations passed or made by said Faculty shall be transmitted to the Chancellor or Vice-Chancellor of said University and College within ten days after the same shall have been passed or made.

8. In the event of the said Faculty becoming possessed of property of any description, or acquiring or procuring a building outside of the limits of the premises owned by the said University, at their own expense or by their own efforts or otherwise, for the purpose of carrying out the objects of this by-law, all such property so acquired shall belong to the said Faculty.

9. All fees paid by students for lectures and instruction by said Faculty shall be paid and belong to the said Faculty, to be used by them in accordance with the rules and regulations of said Faculty.

10. The fee to be paid for any degree shall be $25, and shall be paid and belong to the Western University and College aforesaid.

11. So long as the said School of Law hereby established remains in existence in full working order, as hereinbefore provided, the Western University and College aforesaid shall not incorporate or affiliate itself with any other School or Faculty of Law without the consent in writing of the said Faculty hereby established first had and obtained.

12. The said School of Law hereby established shall not be affiliated or incorporated with any other university or college except on the written request or with the sanction of said Faculty.

13. This statute shall not be amended, altered or repealed, without the consent of the said Faculty having been obtained, in writing, signed by the Dean and Registrar of said Faculty.

In duplicate of one sent on or about December 21st, 1885.

I certify the foregoing to be a true and correct copy of the statute incorporating the London Law School, passed by the Senate of the Western University and College, on the fourteenth day ef December, 1885.

J. W. P. SMITH,
Bursar.

London, Ont.,
February 22nd, 1886.

Education Department,
Toronto, 9th March, 1886.

My Dear Mr. Smith,—On revising your statute *re* Law Faculty, I have come to the conclusion that it is clearly *ultra vires* of the statute creating the Western University, and propose so reporting to Council. I write you this way privately out of consideration for yourself personally and the institution you represent.

Yours, etc.,
G. W. ROSS.

Rev. J. W. P. Smith,
London, Ont.

Toronto, 15th March, 1886.

Sir,—Adverting to previous correspondence upon the subject, I have now the honour to transmit to you herewith for the information of the Senate of the Western University and College of London, Ontario, a copy of an Order of His Honour the Lieutenant-

Governor in Council, dated the 13th March, 1886, disallowing the Statute of the Senate establishing a Faculty of Law in connection with the University and College.

I have the honour to be, Sir,
Your obedient servant,

G. E. LUMSDEN,
Assistant-Secretary.

The Registrar,
Western University,
London, Ont.

The undersigned has the honour to report for the consideration of His Honour the Lieutenant-Governor in Council :—

The Senate of the Western University, established by 41 Vic. c. 70, has passed a Statute, a copy of which is herewith submitted, entitled a Statute for the establishment of a Law School in connection with the Western University and College, of London, Ontario.

The undersigned is of opinion that this Statute should be disallowed, for the following reasons :—

Under section 6 of the said Act, the Senate of the Western University is empowered to make by-laws respecting the number and appointment of professors in the different faculties of learning; the charging of reasonable fees; the admission of students, and the course of study in the several faculties and departments.

By section 3 of the Statute of the Western University, all these powers are delegated to the proposed Law Faculty of the said University, for it is declared that this Faculty shall be a self-governing body in all matters relating to the said School of Law, and shall have full power from time to time to fix the number of professors in the said Faculty, and the fees payable for instruction, and also to make rules respecting the course of study.

The undersigned cannot conceive that it was the intention of the Legislature, when certain persons were designated as the Senate of said University, that such Senate was invested with authority to transfer their powers to another body unknown to the Legislature. In establishing a Senate, with the powers and duties provided for by section 6 of the Act, it was evidently the purpose of the Legislature that all the trusts involved in the maintenance of the University should remain in their hands, and subject to their control. Should the Statute now under consideration become operative, all these trusts, so far as the Faculty of Law is concerned, will be beyond the control of the Senate, and indirect responsibility will take the place of the direct responsibility imposed by the Legislature. By section 4 of the said Statute, it is enacted that all appointments in the said Faculty of Law shall be made in accordance with the recommendation of the said Faculty of Law, thus making the authority of the Faculty superior to that of the Senate. Section 6 is open to a like objection, and as it confers on the Law Faculty the power of conferring degrees and honours, although the Statute erecting the University requires these powers to be exercised by the Senate.

By section 2 of the Western University Act, the Senate was created a corporation with the right, among other things, of holding property, and conveying the same. It is proposed by section 8 of the Statute under consideration, that this right shall also be exercised by the Law Faculty, independent of the corporation from which it derives its authority. If the power to hold property for the purposes of the University in a manner different from that authorized by this Act, be deemed advisable, authority for this purpose should be obtained from the Legislature.

By section 10, Western University Act, it is provided "that any University powers or privileges granted by this Act for conferring degrees, etc., may be withdrawn at any

time when the Legislature deems it expedient to require this University to become affiliated, etc., with the said University of Toronto."

By section 12 of the Statute under consideration, it is enacted "that the said School of Law thereby established shall not be affiliated or incorporated with any other University except on the written request, or with the sanction of said Faculty." It is quite clear that the policy of the Legislature in reserving the right to itself to compel affiliation as provided by section 10, above quoted, is opposed to section 12 of the proposed statute.

By section 6, Western University Act, "the Senate shall have full power from time to time to make and alter any by-laws." This power is repudiated by section 13 of the proposed Statute, which says. "This Statute shall not be amended, altered or repealed, without the consent of the said Faculty having been obtained in writing, signed by the Dean and Registrar of said Faculty."

In recommending the disallowance of the said Statute, the undersigned does not wish to be understood as opposed to the establishment of the said Law Faculty, with such powers as may be necessary for its efficiency and usefulness, but it is obvious such powers must be exercised in accordance with the Act by virtue of which the University exists.

The undersigned therefore respectfully recommends that the said Statute be disallowed.

Respectfully submitted,

G. W. ROSS,
Minister of Education.

EDUCATION DEPARTMENT (Ontario),
Toronto, 5th March, 1886.

ORDERED

That there be laid before this House a Return giving a statement of all payments made on account of the compiling, preparation or publication of the Ontario Readers, up to and inclusive of the Fourth Book, subsequent to that already brought down; Also copies of all advertisements or circulars inviting tenders for the privilege of publishing the said Fifth Reader with copy of agreement entered into and all correspondence relating to the same. A copy of any agreement entered into for the publication of the said drawing books, and the name of the person or firm in whom the copyright is vested together with all correspondence relating thereto. The names of all text books authorized or in course of preparation, and intended to be authorized, or which have been in course of preparation with a view to authorization, subsequent to the list already brought down with the names of the text books, which they have superseded or are intended to supersede. A statement of all payments made for compiling, preparing or publishing each of the said books respectively, and all correspondence relating to the same, and a statement of the subjects in which it has been decided to authorize new text books, and of the person who engaged in the preparation of them.

By Command,

ARTHUR S. HARDY,
Provincial Secretary.

Provincial Secretary's Office,
Toronto, March 20th, 1886.

TEXT BOOKS.

TEXT BOOKS AUTHORIZED SINCE JANUARY, 1885.

Manual of Hygiene for Normal and Model Schools, prepared by the Provincial Board of Health. Copyright in Education Department. Retail price $1.00. Authorized March, 1886

This text book does not supersede any other book, as there was no authorized text book on this subject hitherto.

TEXT BOOKS IN PREPARATION.

Primer of English and Canadian History, to be ready in August, 1886; not to supersede any other text book at present. Copyright in the Education Department. Price not fixed.

All expenses of editing and preparing such text books to be borne by the publishers.

Book of Forms for the book-keeping and business forms required for the Fourth Reader, in course of preparation, to cost ten cents, and to be used conjointly with writing copybooks.

EXPENDITURE on account of the Ontario Series of Readers, in continuance of the Return to an Address of the Legislative Assembly on this subject, dated March 3, 1885.

DATE.	NAMES.	SERVICE.	— $ c.	— $ c.
1885.				
Feb. 28	National Electro and Stereotype Co.	Electrotyping		302 00
" 28	*Grip* Printing and Publishing Co.	Composition, etc., on Second and Fourth Books	200 41	
" 28	" "	Composition on Second, Third and Fourth Books, and 200 copies Primer	169 72	
				370 13
" 28	J. C. Fell	Work on book dies	10 00	
" 28	Williamson & Co	Sundries	1 20	
" 28	Power & Dawson	Blocks for books	198 00	
				209 20
Mar. 4	National Electro and Stereotype Co.	Electrotyping	26 40	
" 4	" " "	"	233 00	
				259 40
" 11	J. Mooney	Proofs of wood cuts	1 75	
" 11	W. Cruickshank	Drawings for illustration	383 00	
" 11	W. Smith	" "	13 50	
" 11	R. Holmes	" "	10 50	
				408 75
" 24	*Grip* Printing Company	Composition, printing, etc., on Fourth Book	259 28	
" 24	" "	Composition, printing, etc., on Primer, Second and Third Books	40 28	
				299 56
" 27	John E. Bryant, M.A	Services		500 00
April 8	Mrs. S. P. Davis	Copying		2 60
" 9	W. Johnston	Services	120 00	
" 9	National Electro and Stereotype Co.	Electrotyping	190 40	
				310 40
" 22	John E. Bryant, M.A	Services	300 00	
" 22	C. State	Engraving	25 00	
" 22	Collector of Customs	Duty on Sundries	2 55	
" 22	American Express Co	Charges	20 70	
				348 25
" 30	Mrs. S. P. Davis	Copying	5 90	
" 30	H. R. Young	Services	41 66	
				47 56
May 4	National Electro and Stereotype Co.	Electrotyping		600 00
" 13	*Grip* Printing Co	Work on Third Book		67 53
" 15	H. R. Young	Services		41 66
" 15	*Grip* Printing Co	Printing, etc	49 67	
" 15	" "	Mendings for Readers	4 53	
				54 20
June 11	National Electro and Stereotype Co.	Electrotyping		150 00
" 13	John E. Bryant	Services		500 00
" 15	L. E. Embree, M.A	Services	550 00	
" 15	Sarah Little	For services of late Robt. Little	1500 00	
				2050 00
" 25	*Grip* Printing Co	Work on Third and Fourth Books		218 97
July 23	John E. Bryant, M.A	Services		300 00
" 29	National Electro and Stereotype Co.	Electrotyping		288 30
Aug. 21	*Grip* Printing Co	Mendings for Second Book		2 00
Sep. 19	" "	Mendings for Primer		1 50
" 21	A. J. Reading	Services		47 00
Oct. 16	National Electro and Stereotype Co.	Electrotyping		68 00
" 26	Geo. E. Thomas	Services		106 00
				$7554 98
	Less reduction in ac. August, 1884.			5 55
	Total			$7549 43

The Education Department, Province of Ontario, Dr., to Macdonald, Davidson and Paterson, services *re* Readers $67 62

EDUCATION DEPARTMENT,
TORONTO, March 19, 1886.

DEPARTMENT OF AGRICULTURE,
OTTAWA, October 19th, 1885.

SIR,—I beg to forward you herewith the enclosed certificate of registration of Copyright No. 2,920, "*re* Reading Tablets for Public Schools, Ontario" (1 to 34 inclusive.)

Yours, etc.,

JOHN LOWE,
Deputy-Minister of Agriculture.

ALEX. MARLING, Esq,
Secretary Education Department.

CANADA.

On the application of George William Ross, Minister of Education for the Province of Ontario, in virtue of "The Copyright Act of 1875," and the requirements of the said Act having been complied with the Copyright of the tablets called

Reading Tablets for Public Schools, Ontario,

(From Ontario Readers, First Book, Part I), is hereby registered on this folio 2920 of Register of Copyrights, No. 14, kept in this office of the Minister of Agriculture, to secure to the proprietor of the said tablets, George William Ross, Minister of Education for the Province of Ontario, all the privileges granted by the said Act.

J. LOWE,
Acting Deputy-Minister of Agriculture.

Office of the Minister of Agriculture,
Ottawa, this 19th day of October, 1885.

Certified to be a true copy of the registration of the said Reading Tablets for Public Schools (*ut enfora*) in the Register of Copyrights, No. 14.

J. LOWE,
Acting Deputy-Minister of Agriculture.

Office of the Minister of Agriculture,
Ottawa, this 19th day of October, 1885.

EDUCATION DEPARTMENT,
TORONTO, October 27th, 1885.

SIR,—With reference to the certificate of copyright dated 19th October, for the Reading Tablets, the Minister desires to be informed whether it is essential that the words in section 9 of the Copyright Act should be printed on the face of each sheet, or whether it will suffice to print them on the label outside of the set.

Yours, etc.,

ALEX. MARLING,
Secretary.

THE DEPUTY-MINISTER OF AGRICULTURE, Ottawa.

DEPARTMENT OF AGRICULTURE,
OTTAWA, October 30th, 1885.

SIR,—In reply to your letter of the 27th instant, I am to inform you that it is better to have the inscription provided by section 9 of "the Copyright Act of 1875," printed on the face of each sheet of the Reading Tablets, copyrighted on 19th inst., as the said sheets

are, no doubt, intended to be used separately. If they were to be used bound up, as an atlas, it is sufficient to have the inscription on title page, as then it would be a "book" in the meaning of the Act.

I remain, etc.,

JOHN LOWE.

ALEX. MARLING, Esq., Toronto.

EDUCATION DEPARTMENT,
TORONTO, November 6th, 1885.

GENTLEMEN,—The Minister desires that in future editions of the tablet lessons the words required by the Copyright Act be printed on the matter, and at the bottom of each of the sheets, and not only on the wrapper and first sheet, as allowed for the first edition now printed.

Yours, etc.,

ALEX. MARLING,
Secretary.

MESSRS. COPP, CLARK & Co., Toronto.

EDUCATION DEPARTMENT,
TORONTO, August 12th, 1885.

MY DEAR MR. BRYANT,—I intend to proceed at once with the preparation of the High School Reader, and am willing that you should do the work, particularly as your past experience and success is an ample guarantee that it will be well done. Of course the book will have to be prepared without any expense to the Department, and I am now writing so that you might devise some means whereby a publisher can be secured who would undertake it for us.

Yours, etc.,

GEO. W. ROSS.

JOHN E. BRYANT, Esq., M.A., Gore Bay.

LINDEN VALLEY, August 29th, 1885.

MY DEAR MR. ROSS,—I regret very much that your letter of the 12th instant should have missed me, both at Gore Bay and Sault Ste. Marie, and should reach me here only last night.

I thank you for your kindness in thinking of me with respect to the new High School Reader, as it is an evidence that you are not altogether displeased with the work I have already done for the department, certain demerits of which I am only too painfully conscious of.

The preparation of the High School Reader would be something I should very much like to undertake, as I think I am better qualified for that work than I was for the other Readers. But I do not think it would be right for me, on the strength of the experience I have gained while in your employ, and with an assumption of your approval of my fitness, to approach any publisher with an offer of my services. If you should see fit to recommend me to any publisher I should deem it an honour.

I should like to say, too, that I am not certain whether my connection with the *Educational Weekly* may not make it impossible for me to undertake any work which may be considered either directly or indirectly in the gift of the department; but upon that I need not decide until I hear further from you in regard to the matter, or from some publisher. I shall return to Toronto on Tuesday and can wait upon you, if desired, at any time you may fix.

With sincerest wishes,

I remain, yours truly,

JOHN E. BRYANT.

HON. G. W. ROSS,
Minister of Education.

EDUCATION DEPARTMENT,
TORONTO, September, 28th 1885.

MY DEAR SIR, I am about making arrangements for the High School Reader of which I spoke during the summer. With your experience on the Fourth Book I think you are better qualified than any other person I know of to undertake this new work. Could you run up on Wednesday evening next and see me at the Speaker's Chambers about the matter. I leave for home on Thursday at noon; will not be in town on Saturday and consequently could not see you unless you come on Wednesday, without delaying the matter longer than I would like.

Yours, etc.,

GEO. W. ROSS.

L. E. EMBREE, Esq., Whitby.

EDUCATION DEPARTMENT,
TORONTO, December 2nd, 1885.

MY DEAR SIR,—I expect to arrange this week for the publication of the Fifth Reader to be known as the "High School Reader." Would you communicate with Mr. Embree at once, and set about the preparation of the manuscript, etc? If you submit me a brief outline of your plan before you enter upon your work, I would gladly consider it with you any day this week or next. The manuscript should be ready not later than the 1st of April, as I would like to place the book on the market not later than the 1st August.

Yours, etc.,

GEO. W. ROSS.

JOHN E. BRYANT, Esq., M.A.,
Editor *Educational Weekly*, Toronto.

SPECIFICATIONS FOR PRINTING, BINDING AND PUBLISHING THE FIFTH READER OF THE SERIES OF ONTARIO READERS.

Offers will be received at the Department of Education, Toronto, up to noon on Tuesday, January 12th, inst., for the exclusive right to publish and sell for one year, from the date of authorization by the Education Department, the Fifth Reader of the Series of Ontario Readers.

The offer to be an amount in cash, to be paid into the Department before the book shall be authorized for sale

The book to be ready for sale by the 1st of August, 1886. Copy to be supplied by the Education Department, Toronto, and to be given, all or in part, to the publisher as soon as the tender is accepted All copy to be supplied before 1st of April. Proofs to be submitted to the Department, and sanctioned, as the work proceeds.

Composition.

To comprise fourteen *forms* of thirty-two pages each, making 448 pages printed matter, to be about one-third Long Primer, and two-thirds Small Pica type, solid. The type used to be new. Length and breadth of printed pages to be same as those of the Fourth Reader of the series of Ontario Readers.

Presswork.

To be first-class, uniform in colour and impression throughout the book. Ink to be used to be worth at least seventy-five cents per lb.

Paper.

To be toned same shade as Ontario Readers. No. 1 in quality, to weigh eighty pounds to the ream of 480 sheets, to measure 30 inches by 42 inches, and to be super-calendered.

Binding.

To be full bound in cloth ; to be sewed by hand and with thread on three tapes each one inch in width. Sections to be 16 pages, and each section to be sewed on the three tapes. Stitches and tapes on back of books to be covered with fine, strong, evenly-made mull, extending to within one-half inch from top and bottom of books, and overlapping one inch on each side ; on the mull a strong piece of paper or pressings to be glued. Both tapes and mulls to be glued to covers. Quality and weight of straw board to be twenty-five boards to the bundle of fifty pounds. End papers to be of the same quality of paper as that used in the book, and to be pasted on separately from first and last sections. Cloth for covers to be extra finished, twilled, and of same colour as other books of the series. Covers to be embossed same pattern as Fourth Reader of the Series of Ontario Readers. Each and every part of the binding to be thoroughly done and durable. Tenders for quarter binding in sheep, on similar conditions, will also be required.

Publishers to state in tender at what retail price, and what trade discounts on such retail price, the proposed Fifth Reader is to be published.

Tenders above seventy-five cents per single copy, retail, will not be considered ; and no offer necessarily accepted.

At the expiration of one year from date of authorization the exclusive right is to lapse, and then any publisher, upon application and agreement with, and after receiving authority from the Department of Education, and agreeing to comply with the specifications as to Printing, Binding and Publishing, may also publish the said Fifth Reader.

The Minister of Education, or any person by him appointed for that purpose, may from time to time and at any time during business hours, enter the warehouse and other business premises of any and each of the publishers who may obtain the right to publish this book, for the purpose of inspecting every edition of the said Reader, and reporting to the Department of Education whether the above specifications as to its manufacture are being observed.

The publisher to supply free of cost one set of the electro-plates of said Reader to the Education Department.

EDUCATION DEPARTMENT,
January 28th, 1886.

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54 FRONT STREET WEST,
TORONTO, January 12th, 1886.

HON. G. W. ROSS,
Minister of Education.

DEAR SIR,—We herewith offer to undertake the publication of the Fifth Reader of the Ontario Series, and to issue the same at the retail price of seventy-five cents, complying with the terms of the printed specifications, submitted, asking for tenders.

For the right of publication we are prepared to pay $1,150, said money to be payable when the book is published, and approved of by the Minister of Education.

Yours, etc.,

W. J. GAGE & CO.

TORONTO, January 12th, 1886.

HON. G. W. ROSS,
Minister of Education.

DEAR SIR,—In response to your request for tenders for the publication of the Fifth Book, Ontario Readers, we beg to make the following offer :—

To comply with the specifications as to production of copies in all points as set forth.

To sell at sixty cents retail, with a trade discount of twenty per cent., and an extra ten per cent. on any quantity which, together with the other books of the series, will make a net amount of $1,000.

For the right to publish for the term of one year only, $750. For the right to exclusive publication for two years, $1,000, and in each case a set of electro plates to the Department.

We would respectfully suggest that the period of one year's exclusive right, is too short to be of value to the possessor. New books take a year to find their way into the schools, especially if it is a new series displacing an old series ; in addition to that, the fact being known that the publication would be thrown open at the end of a year, and that likely there would be a change of price would interfere materially with the sale. In view of these points we would urge that the time of exclusive right be at least two years.

If the book is quarter bound in sheep, price will be seventy cents, retail.

Our offer is based on the understanding that the copy will all be supplied by April 1st, a good part of it at once, and that it be of such a character as to avoid expense in editorial changes and corrections.

We would further most respectfully suggest, as a matter of simple justice, that whoever acquires the right to publish subsequently, should pay to us half the amount we pay, and should not have a set of plates at less than the pro rata cost of production.

Yours, etc.,

COPP, CLARK & CO.

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8 and 10 WELLINGTON STREET,
TORONTO, January 12th, 1886.

HON. G. W. ROSS,
Minister of Education,
Toronto.

SIR,—In reply to circular issued by your Department, dated January 8th, 1886, in reference to publishing for one year, the Ontario Fifth Reader, we beg to make the following offer for your consideration :—

We will comply with the specifications in every particular, and in having the sole right to publish for one year from issue of the book, in addition to furnishing one set of electro plates, pay the sum of $500 on issue of the book, or as soon after as may be directed by you.

Retail price of Fifth Reader to be as follows :—

Full extra cloth, embossed in ink	$0 75
Quarter sheep, gold lettering on back, ink sides	1 00

Discounts from above prices to be as follows :—

Twenty-five per cent. off in quantities of less than $100 worth nett, at usual trade terms.

Twenty-five per cent. and ten per cent. in quantities of over $100 worth nett, at usual trade terms.

Our usual trade terms are four months' note, or five per cent. off for cash in thirty days.

Waiting your further communications,

Yours, etc.,

WARWICK & SON.

ROSE PUBLISHING CO.,
TORONTO, January 12th, 1886.

TO THE MINISTER OF EDUCATION,

SIR,—We beg to offer for the exclusive right to publish and sell the new Fifth Reader for one year, the sum of $1,100, and we would make the retail price sixty cents, and give a discount to the trade of twenty-five per cent., with an extra five per cent. discount for cash.

Yours, etc.
DAN. A. ROSE.

METHODIST BOOK & PUBLISHING HOUSE,
TORONTO, January 12th, 1886.

To HON. G. W. ROSS,
Minister of Education,
Toronto.

SIR,—We beg to tender for the privilege of publishing the new Fifth Reader, according to the specifications in your circular, asking for tenders bearing date January, 8th, 1886.

We will furnish the Department with a duplicate set of electrotype plates, and pay a sum of money as below:—

If sold at sixty cents, and twenty per cent. and ten per cent. discount allowed to the trade, we will give the sum of $500.

If sold at seventy cents, and twenty per cent. and ten per cent. discount, the sum of $900.

If sold at seventy-five cents, and twenty per cent. and ten per cent. discount, the sum of $1,020.

If sold at sixty cents, and twenty-five per cent. and ten per cent. discount, the sum of $350.

If sold at seventy cents, and twenty-five per cent. and ten per cent. discount, the sum of $700.

If sold at seventy-five cents, and twenty-five per cent. and ten per cent. discount, the sum of $850.

We agree to produce the book in first-class style, and in full accordance with the specifications in your circular.

Yours, etc.,
WM. BRIGGS.

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25 WELLINGTON STREET, WEST.
TORONTO, January 12th, 1886.

TO THE MINISTER OF EDUCATION,
Toronto,

SIR,—We would offer the sum of $1,500 for the exclusive right to publish and sell for one year, the Fifth Reader of the series of Ontario Readers.

The retail price to be 60 cents, and the trade discount to be 20 per cent., with an extra 5 per cent. for cash.

Yours etc.,
HUNTER, ROSE & CO.

CANADA PUBLISHING COMPANY, LIMITED,
32 and 34 FRONT STREET,
TORONTO, 11th January, 1886.

SIR,—We beg to submit an offer to pay for the right to publish, as per your specifications, the new Fifth Reader, for one year from date of authorization, and the right to

continue its publication jointly with competitors thereafter, eleven hundred dollars ($1.100) on condition that the maximum retail price be seventy-five cents (75 cents).

We to allow the trade a minimum discount of twenty per cent. (20 per cent.), and when ordered with other readers in $1,000 lots a discount of 20 per cent and 10 per cent.

Yours etc.,

FOR THE CANADA PUBLISHING CO., (Limited).
S. G. B.

Hon. G. W. Ross,
Minister of Education,
City.

Toronto, 2nd February, 1886.

Hon. W. Ross,
Minister of Education.

Dear Sir,—With regard to bondsmen for the carrying out of our contract anent Fifth Reader, will you accept as such Mr. William Mowat, Banker, Stratford, and John MacFarlane, Manager of the Canada Paper Co., Montreal?

Yours etc.,
G. M. ROSE.

Toronto, 10th February, 1886.

Hon. Mr. Ross,

Dear Sir,—I enclose bond and note for $1,100 to close the Fifth Reader contract, and trust the editor will soon put us in possession of some copy to enable us to proceed with the work at once. The cloth for covers has been ordered from England, and the order for the paper goes off to-day.

Yours etc.,
G. M. ROSE.

Know all men by these presents:

That George McLean Rose, Daniel Rose, and Daniel Alexander Rose, trading under the name of "The Rose Publishing Company," hereinafter called the publishers, and William Mowat, Banker, Stratford, and John MacFarlane, Manager, Canada Paper Co., Montreal, hereinafter called sureties, are jointly and severally firmly bound unto Her Majesty the Queen in the sums following, namely, the said Rose Publishing Company in the sum of two thousand dollars, and the said John Macfarlane and William Mowat, sureties, each in the sum of one thousand dollars, to be paid to Her Majesty the Queen and her successors, for which payment to be well and truly made we severally bind ourselves, our executors and administrators by these Presents, sealed with our seals and dated this Second day of February in the year of our Lord one thousand eight hundred and eighty-six.

Whereas the Publishers have obtained from the Minister of Education representing the Education Department of the Province of Ontario, the sole right to print and publish for the period of one year "The High School Reader," prepared and authorized by the said Education Department, for use in the Public Schools of the Province of Ontario, under and subject to the terms and conditions of the annexed Indenture of Agreement dated the twenty-seventh day of January one thousand eight hundred and eighty-six.

Now the condition of the above obligation is such that if the said Publishers, their executors, administrators and assigns, do and shall observe, perform and fulfil the terms and conditions of the said Indenture of Agreement, and the Regulations of the Education Department respecting text-books for use in the Public Schools as the same now are or may from time to time may be in force, and if the several copies of the said books so printed shall

in paper, printing, binding and other qualities conform to the said Indenture of Agreement; and if the said books so printed shall be sold by the said Publishers so that the retail price of each copy thereof for use in the Public Schools shall not exceed the maximum sum fixed by the said Indenture of Agreement, and if the said publishers do and shall observe, perform and fulfil as to each copy of the said book each and every of the terms and conditions of the said Indenture of Agreement, then these presents shall be void, otherwise to remain in full force.

Signed, Sealed and delivered in the presence of H. M. WILKINSON, As to signatures of Geo. MacLean Rose, Daniel Rose, and Dan. A. Rose.	(Signed)	G. W. MACLEAN ROSE.	[L. S.]
	,,	DANIEL ROSE.	[L. S.]
	,,	DAN. A. ROSE.	[L. S.]
A. C. MOWAT, As to the signature of W. Mowat.	,,	W. MOWAT.	[L. S.]
J. H. WYNNE, As to the signature of J. Macfarlane.	,,	JOHN MACFARLANE.	[L. S.]

THIS INDENTURE made in duplicate this twenty-seventh day of January, in the year of our Lord one thousand eight hundred and eighty-six,

Between

George McLean Rose, Daniel Rose, and Daniel Alexander Rose, trading under the name of "The Rose Publishing Company," hereinafter called the publishers, of the first part,

and

Her Majesty the Queen, represented herein by the Honourable the Minister of Education for the Province of Ontario, acting for the Education Department of Ontario, of the second part.

Whereas the publishers have made application to the Education Department of the Province of Ontario for the right to print and publish "The High School Reader," for the use of the public schools in Ontario.

And whereas the said Department of Education have approved of such application, and have agreed to grant the said publishers the right to print and publish the said "High School Reader," hereinafter called the Book, subject to the covenants and conditions hereinafter contained, and to the terms and conditions of the regulations in that behalf of the said Department of Education.

Now therefore this indenture witnesseth, that in consideration of the premises and of the sum of $1,100 of lawful money of Canada, the receipt whereof is hereby acknowledged, the said publishers do hereby covenant with Her Majesty the Queen, her successors and assigns in manner following, that is to say:

1. That the publishers shall from time to time and at all times observe, perform and fulfil in respect of the said book each and every one of the terms and conditions of the regulations of the said Education Department respecting the printing and publication of text books, and also the terms and conditions hereinafter contained, and that each and every copy of each and every edition of the said book shall in every particular be printed and published by the publishers in strict conformity therewith.

2. And that the publishers shall submit or cause to be submitted to the said Education Department sample copies of each and every edition of the said book to be hereafter printed and published, for sale or use in the Province of Ontario, for the approval of such Department as to the mechanical execution of the press-work, binding and all other mechanical parts of the work, and that without such approval having been first had and

obtained, no copy of any edition thereof shall be sold or disposed of for use in the said Province of Ontario. And furthermore, in order to avoid causing any loss to the said publishers arising from, or liable to arise from, any edition of the said book not being approved of by the Education Department, owing to any serious defect or defects in any edition, and on that account condemned by the Education Department, and forbidden to be sold or issued to the schools or to the public, and also to more effectually protect the public, the said publishers shall submit or cause to be submitted to the Education Department for examination, sample sheets of the different forms of the book about to be printed, and specimens of the ink, paper, millboard, strawboard, cloth, mull, tapes, and other material proposed to be used by said publisher in the printing and construction of the said book, together with a statement of the prices, weight, size, and other particulars necessary to judge of the relative quality of the different materials used or proposed to be used ; and the approval of the Education Department shall, before any work is proceeded with, be obtained in regard to the quality of the printing, and of the paper, and other material proposed to be used. And furthermore, after sanction has been given to the using of such material, or of such printing, presswork and binding, two sample copies at least of the book shall be submitted by said publishers, bound and finished in all respects *as proposed to be issued* by the said publishers, and that without such approval first had and obtained, no work in regard to binding said book shall be proceeded with.

3. And that the paper to be used in each and every edition of the said book, and every copy thereof shall be equal in quality to the sample prescribed by the said Education Department, to wit, No. one quality, eighty pounds to the ream of 480 sheets, to be toned same shade as that of Ontario Readers, and measuring thirty inches by forty-two inches of good colour and texture, and super calendered, or of such increased weight and improved quality as may be required by the Education Department, provided the cost of the same shall not exceed the cost of the sample herein prescribed, and no inferior quality of paper shall under any pretext whatsoever be used. The presswork and ink shall be first-class throughout, and shall be such as to produce together with the plates a clear and distinct impression ; and the stitching and binding of each and every edition of the said book, and the material used therein shall be equal to the sample submitted to and approved of by the Education Department as aforesaid, that is to say, to be full bound in cloth ; to be sewed by hand and with thread on three tapes each one inch in width. Sections to be 16 pages, and each section to be sewed on to the three tapes. Stitches and tapes on back of books to be covered with fine, strong, evenly-made mull, extending to within one-half inch from top and bottom of books, and overlapping one inch on each side ; on the mull a strong piece of paper or pressings to be glued. Both tapes and mull to be glued to covers. Quality and weight of straw board to be twenty-five boards to the bundle of fifty pounds. End papers to be of the same quality of paper as that used in the book, and to be pasted on separately from first and last sections. Cloth for covers to be extra finished, twilled, and of same colour as other books of the series. Covers to be embossed same pattern as Fourth Reader of the Series of Ontario Readers. Each and every part of the binding to be thoroughly done and durable ; and no departure from such specification shall be made without the sanction of the Educational Department, and no copy of the said book which does not in all particulars comply with the foregoing provisions in regard to paper, presswork, typography, ink and binding shall be sold or disposed of for use in the Province of Ontario.

4. And that the said sample copies to be furnished as hereinbefore provided for shall remain on file in the said Education Department, and each and every copy of each and every edition published, shall in all respects be equal to the sample copy so furnished to and on file in the said Department.

5. And that in case the Minister of Education points out to the said publishers any defect or defects in the sample copies furnished to the said Department as aforesaid, but not deemed by him of sufficient importance to cause him to withhold his approval from such edition, then in such case the said publishers shall in the next following edition or issue to that in which said defect shall have been pointed out, correct the same to the satisfaction of the said Department, but in case serious defects are pointed out by the

Minister of Education to the publishers in any edition published by said publishers, and in case such edition is condemned by the Minister of Education as unfit for use in the schools or for sale to the public, the condemned edition shall become confiscated, and shall, if required by the Minister of Education, be delivered by the said publishers into the custody of the Education Department to be destroyed, unless an arrangement satisfactory to the Minister is made for culling out any defective portion or portions, or the matter is in some other way adjusted.

6. And that the said book shall be of the size following, that is to say: the length and breadth of the printed pages shall be the same as those of the Fourth Reader of the Ontario series. And that the said book shall be sold at retail prices not exceeding the following:—Sixty cents per copy.

7. And that in order it may be the more easily recognized and ascertained that each and every copy of each and every edition of the said book to be published and in use in the said Province of Ontario is not only authorized but approved as to its mechanical execution, contents, and otherwise, by the said Education Department, the publishers shall cause to be printed upon the title page of each and every copy of each and every edition of the said book the name of the firm by which such book is published, and the words "*Authorized by the Education Department for Ontario*," or words to that effect, or shall place upon the title page or cover of each copy of the said book the official stamp of the Education Department.

8. And that the retail price of each and every copy of each and every edition of the said book shall be printed on the cover or title page thereof. No advertisements of any kind shall appear in any of the said books, or upon the covers of the said books, except such as are approved by the Education Department.

9. And that for the better securing the retail sale of the said book at a price not exceeding that above set forth as a maximum retail price, the publishers shall make the sale to any purchaser buying quantities of such book of one dozen and upwards at one time at prices at least twenty-five per cent. lower than the said prescribed retail prices on the usual terms of sale, and that to purchasers of the said book in lots of the sale value of one hundred dollars, computed at the said *retail* prices, the said publishers shall make a further reduction of five per cent. in the price thereof; and in lots of the sale value of five hundred dollars, computed at the said *retail* prices, the said publishers shall make a further reduction of five per cent. in the price thereof; and that the said publishers shall and will from time to time and at all times keep on hand a sufficient quantity of copies of the said book to supply all demands of the public and trade therefor, on and after the first day of July, 1886.

10. And that the Minister of Education, or any person by him appointed in writing for that purpose, shall and may from time to time, and at any time during business hours, enter the warehouse and all other business premises or any part thereof of the Publishers, for the purpose of inspecting any and every edition or issue of such authorized book and every copy thereof, and shall have a right to take sample sheets or other samples of material, or sample copies of said books for the purpose of examination, whenever he thinks proper so to do.

11. And that in case the said Education Department shall at any time consider that the retail price heretofore mentioned of the said book should be reduced, the Minister of Education and said publishers may arrange, at the option of the Minister of Education, a reduced retail price and scale of discounts, or the Minister of Education shall appoint an arbitrator, the publishers shall appoint another, and the Chancellor of Ontario, upon the application of the Minister of Education or of the publishers, or the joint application of all parties hereto, shall appoint a third, and in case the publishers shall, for ten days after having been notified in writing of the appointment of an arbitrator by the Minister of Education, omit to appoint an arbitrator, or to notify the Minister of Education in writing of the appointment, then the Chancellor of Ontario may name two arbitrators to act with the arbitrator appointed by the Minister of Education: and the publishers shall, at any time and at all times when called upon so to do by the arbitrators or any two of them, furnish

the arbitrators with a detailed statement, showing the cost of production and the returns of the sales of any or all copies of the said book, and shall in addition, if so requested, furnish the said arbitrators or any two of them for inspection all the vouchers and books which in any way refer to or contain any entry concerning the cost of production and returns of the sales of the said book, and that if it shall be deemed by the said arbitrators or any two of them, that an excessive profit is being made by the said publishers upon the sale of the said book, the retail prices of the same shall be reduced to amounts which the said arbitrators or any two of them shall deem sufficient to yield a reasonable profit to the said parties, and such arbitrators or any two of them shall, upon such appointment, have full power to consider the question or questions submitted to them, and to examine all statements, vouchers and books furnished by the said parties, and full power to compel the production of such additional statements, vouchers and books to those furnished by the said parties, and the evidence of any kind whatsoever which they shall deem necessary, with power to examine witnesses upon oath, and their decision in the premises, or that of any two of them when given in writing, shall be conclusive and binding upon the parties hereto, and the retail price or prices so fixed shall thenceforward govern the price or prices by the dozen, and other wholesale prices as hereinbefore provided for.

12. And that the said publishers will not print or publish, nor cause or authorize to be printed or published nor be in any way accessory to the printing or publishing of any edition or copy or copies of the said book in the United States or anywhere else without the limits of the Province of Ontario, to be sold within the said Province of Ontario.

13. And that the publishers shall not in any way, without the consent in writing of the Minister of Education, acting on behalf of the Education Department, assign any right conferred upon such publishers by this agreement.

14. And that should any difference of opinion arise between the parties hereto as to the construction to be put upon any of the terms, conditions and agreements herein contained, the same shall, if he consents to determine the same, be determined by the Chancellor of Ontario, after giving the parties hereto an opportunity of presenting their views, in person or by counsel, or if the said Chancellor decline to determine such difference, then at the option of either of the parties hereto, and on the conditions herein contained, such matters of difference shall be determined by the Attorney-General of Ontario, and such determination by the said Chancellor or Attorney-General shall be final and conclusive and binding upon the parties to this Indenture.

15. And that upon the Minister of Education giving to the said parties six months' notice, the Education Department may require the alteration of the contents of the said book, and may alter any of the specifications hereinbefore contained, provided the publishing is not thereby made more expensive: but that no change shall be made by the publishers in the contents of the said book, nor any addition thereto, nor any omission therefrom, nor any notes or appendices thereto, nor any other change in the subject matter thereof, without the consent in writing of the said Education Department first had and obtained. The notice hereinbefore provided for may be given by publication thereof in two issues of any newspaper published in the City of Toronto and in the *Ontario Gazette*.

16. In case any other publisher or publishers, approved by the Department of Education, desires or desire to obtain the right of publishing the said book, he or they may obtain such right upon payment to the parties of the First Part (or upon securing payment in such manner as the arbitrators hereinafter provided for may direct, or as may be agreed upon) such sum or sums of money as may be agreed upon or determined by such arbitrators. The said arbitrators to be appointed as follows: the publisher or publishers desiring authority to publish shall appoint an arbitrator, and give notice thereof in writing to the party of the First Part, calling upon such party to appoint an arbitrator, and such party shall thereupon, and within ten days, appoint an arbitrator, and notify the other party of such appointment; the two arbitrators appointed by or for the parties shall, within ten days from the appointment of the lastly named of the two arbitrators, appoint in writing a third arbitrator. In case the party of the First Part, for ten days after being notified as aforesaid, omits to appoint an arbitrator, or to notify the opposite party of such appoint-

ment, or in case the two arbitrators named omit or fail for ten days after the second arbitrator has been appointed to name a third arbitrator, the Minister of Education may name an arbitrator for the party in default, or a third arbitrator as the case may require. The said arbitrators shall have full power to consider the matters in question, and to examine all statements, vouchers, and books furnished by the said parties, and the evidence of any kind whatsoever which they shall deem necessary, as to the cost of authorship, clerical service, printing, electrotyping, and all other necessary and proper expenses incurred in the preparation of said book, and to examine witnesses upon oath; and their decision in writing, in the premises or that of any two of them when given shall be conclusive and binding upon the parties concerned, and the costs, charges, and expenses of such arbitration shall fall upon and be borne equally by the said publishers concerned therein, unless the arbitrators shall determine that such costs, charges and expenses shall be borne in a different proportion.

Provided that after any arbitration has been held as aforesaid and the rights of the parties concerned have been settled thereby, if any other publisher or publishers should desire the said right of publication, then the Department of Education shall, if they think it proper to accord said right, give instructions as to the manner in which the said sum or sums of money should be apportioned, by and between the parties interested in the publication of such book.

17. And the publishers hereby agree—that if the publishers, or any of them (if more persons than one are of the First Part hereto) deliberately disregard the terms of this agreement, or fail to carry out the same in a matter of substance, the publishers shall forfeit all his or their rights under this agreement, and the Minister of Education may apply to any Division of the High Court of Justice for a declaration of such forfeiture, and to restrain the publisher from further printing, publishing or selling any copies of the said book.

18. Provided, and it is hereby expressly agreed, that no edition or copy of the said book shall be printed or published by the publishers until the publishers shall have executed these presents, and shall have executed to Her Majesty the Queen a bond in the penal sum of two thousand dollars, with two sureties approved by the Minister of Education, each bound in the sum of one thousand dollars, conditioned for the due observance and fulfilment by the publishers of all the terms, conditions, clauses, agreements, obligations and covenants herein contained, and also of the Regulations of the Education Department from time to time in force respecting text-books for use in the public schools.

19. It is hereby expressly declared and agreed that the Minister of Education may, on giving the publishers one year's notice in writing, terminate this agreement and declare the said book no longer authorized as a text-book for use in the schools of the Province of Ontario.

20. And it is hereby further expressly provided that if the said publisher becomes insolvent or bankrupt, or makes any assignment for the general benefit of his creditors, all and every right conferred under or by virtue of this agreement shall, at the discretion of the Education Department, thereupon cease and determine, and provided also that in case by the death of any person in whom the right of publication is vested, such right devolves upon any personal representative or representatives, such representative or representatives shall have no authority to transfer such right, or any part or share thereof, to any person or persons unless or until such person or persons is approved of by the Department of Education.

21. Provided also that in case the publishers, or any other person entitled to any right by virtue of this agreement, shall assign the same to any other person the right of the publishers or such other person shall, at the discretion of the Education Department, thereupon cease and become forfeit and absolutely at an end.

22. To prevent any possibility of misapprehension, it is hereby expressly declared and agreed, that in case there are more persons than one named as *of the First Part* hereto, the breach by any one of such persons of any covenant, term or condition herein contained,

whether such covenant, term or condition is affirmative or negative, shall be a breach for which all such persons shall be liable.

23. It is understood and agreed between the parties hereto, that this agreement is entered into subject to the approval of His Honour the Lieutenant-Governor of the Province of Ontario in Council.

24. It is further understood and agreed between the parties hereto, that the Education Department shall not, for the period of one year from the authorization of said book, authorize any other publisher to print or publish said High School Reader, and paragraph sixteen herein contained is to be regarded as not applying to this agreement or any part thereof. It is further agreed that the said publishers shall deliver to the Education Department, on or before the first day of July next, a complete set of electrotypes of the said book, of first-class quality in good condition, and that no extra charges shall be made for corrections or alterations in proof-reading or otherwise, and that such patterns and varieties of type shall be used as may be required by the Education Department.

In Witness Whereof the parties hereto have hereunto set their hands and seals the day and year first above written.

Signed, Sealed and Delivered in the Presence of (Signed) H. M. Wilkinson.

(Signed) GEO. MACLEAN ROSE, [L. S.]
" DANIEL ROSE, [L. S.]
" DAN. A. ROSE. [L. S.]

Education Department,
Toronto, 2nd February, 1886.

My Dear Sir,—In the contract for the publication of the High School Reader it is agreed that some of the copy should be put in at once, and that all the copy should be in the printer's hands before the 1st April. The contractor would like to get the copy in such a shape as to render many corrections unnecessary. Could you call in any day this week in the forenoon and see me?

Yours etc.,
G. W. ROSS.

John E. Bryant, Esq., M.A.,
Editor *Educational Weekly*,
Toronto.

Education Department,
Toronto, 12th February, 1886.

Gentlemen.—Your favour of the 10th instant enclosing bond *re* High School Reader, and note for $1,100 is hereby acknowledged.

Enclosed please find copy of the agreement entered into in regard to above book.

Yours etc.,
ALEXANDER MARLING,
Secretary.

The Rose Publishing Company,
Toronto.

St. Mary's, January 1st, 1885.

To the Hon. The Minister of Education.

Sir,—I beg leave to call your attention to certain points in the curriculum for second and third class certificates for 1885.

The first subject to which I ask your attention is Drawing. All will admit that this is one of the most useful subjects of the course, and I think most teachers will also admit

that Drawing is not successfully taught at present in the High and Public Schools of Ontario. I am thoroughly convinced that the chief reason for this state of things is the very indefinite way in which Drawing is left in the curriculum. When a teacher does not know what to teach, he is not very likely to be successful. My opinion of the teachers of Ontario is this :—Give them an outline of the work to be taught, and also a good text-book, and they will see that the pupils prepare the work well. If this were done in drawing, I believe that the majority of the teachers would be thoroughly posted in the work before the end of the year. In the regulations for 1884 I find drawing mentioned on page 13, and the value of the paper fixed at 75 marks, but I cannot find anything to guide the teacher in the work. For 1885 drawing is given on page 4. "Freehand, Practical Geometry, Perspective, and Industrial Designs." Walter Smith's "Intermediate Course" is sufficient for Freehand and Industrial Designs, but it does not touch Practical Geometry, and is valueless as a manual on perspective. Would it not be well to give part or all of the work for teachers' examination in Practical Geometry, as laid down in the "curriculum of studies in Practical Geometry for Art Schools, Mechanics' Institutes, etc., etc., dated, Education Department, Toronto, November 10th, 1884." If this were done and the teachers supplied with a list of the problems, and also told that all the problems are to be found in Linear Drawing, by Ellis A. Davidson, the work would be mastered by nine-tenths of the pupils. The same thing should be done in Practical Perspective. The Education Department would help teachers very much by issuing a curriculum something like the following :—

I. Perspective projection of single points.
II. ,, ,, lines.
III. ,, ,, planes and rectangular solids.

The list could be extended by adding prisms, pyramids, polygons, circles, cylinders, etc., but it should not be made too heavy for the first year. A suitable text-book such as Ellis A. Davidson's Practical Perspective should be announced to the teachers as containing the work required. I have found in examining the papers on drawing at the entrance examinations, that a large number of the candidates have never been drilled in the work. They do not appear to have any idea of what is expected of them. The work is not understood by their teachers. At the teachers' examinations the candidates should be allowed to use *ruler* and *compasses*, or the work will not be properly done.

Freehand drawing cannot be helped in any way with instruments ; but Perspective and Practical Geometry cannot be done without them.

You will see by examining the papers set for music that the candidates are expected to know the theory of music. The Normal Music Course, Part II, was ordered by our booksellers last Easter, and returned to the publishers as it did not contain anything on the theory of music ; the same thing was done in September last. Is there an authorized text-book on music which contains the information required by the examiners?

In drawing and music the work can be as well done as in any other subjects if the Education Department will give a synopsis of the work and select a text-book containing this work. Unless this is done, a great part of the time spent on them will be wasted.

I trust you will not think I am presumptuous in asking you to give this matter your serious attention.

Yours etc.,

JOHN E. TOM.

P.S.—I noticed some time ago in the *Globe* that a number of teachers had waited on you for the purpose of having the regulations so amended by the Education Department that the First Class certificates, grades A and B, might be awarded on some other basis than by passing the prescribed examinations. I believe this would be a great injury to the profession. If anything is done I hope the Department will extend the work beyond that required for grade A. If this were done, a number of those who obtain grade A would continue their special course.

Yours truly,

J. E. T.

EDUCATION DEPARTMENT.
TORONTO, 7th January, 1885.

MY DEAR SIR,—I am very much obliged for your valuable hints in regard to the subjects of drawing and music. I am preparing a series of drawing books—two of which will be ready in a few days—which will enable our teachers to teach this subject without any difficulty or doubt. Heretofore there was no basis on which an examination could be conducted on this subject; now an examination will be conducted on a line with the text books or drawing books, more properly speaking, and the evil of which you complain will be removed. The subject of music is more difficult to deal with. Any written examination in music is but a feeble test of the actual attainments of the candidates We must, therefore, rest content with such means of judging the qualifications of a candidate in this subject as we have adopted heretofore.

It is not my intention to allow the holder of a First-Class "C" certificate to obtain a higher grade without preliminary examination. It may, however, be decided upon to allow professional success to stand in lieu of certain subjects now on the curriculum of non-professional studies.

Yours, etc.,
GEO. W. ROSS.

JOHN E. TOM, Esq.,
Collegiate Institute, St. Marys.

DEPARTMENT OF AGRICULTURE,
OTTAWA, 19th February, 1885.

GENTLEMEN,—I beg to inform you that your copyright of the book called "The Canadian Drawing Course, elementary freehand, object, constructive and perspective Drawing Book 1," has been registered this day in folio 2515, of register of copyrights, No. 12.

Yours, etc.,
JOHN LOWE,
Deputy-Minister of Agriculture.

THE CANADA PUBLISHING COMPANY, Toronto.

DEPARTMENT OF AGRICULTURE,
Copyright and Trade Mark Branch,
OTTAWA, Canada, 2nd March, 1885.

GENTLEMEN,—I beg to inform you that your copyright of the book called "The Canadian Drawing Course, elementary freehand, object, constructive and perspective Drawing Book 2," has been registered this day in folio 2533, of register of copyrights, No. 12.

I have, etc.,
JOHN LOWE,
Acting Deputy-Minister of Agriculture.

TO THE CANADA PUBLISHING COMPANY,
Front St. West, Toronto.

TORONTO, 5th March, 1885.

SIR,—In reply to your enquiry made through Mr. Nudel, *re* Drawing Course, we beg to inform you that books 1 and 2 are finished and authorized; book 3 is on the press and will be ready in ten days; books 4 and 5 are well under way and likely to be completed some time next month.

We take the liberty of sending you herewith sample copies of Nos. 1 and 2 and a blank to accompany them.

Yours, etc.,

FOR THE CANADA PUBLISHING CO., (Limited),
Per B.

ALEX. MARLING, Esq., Toronto.

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54 FRONT ST. WEST,
TORONTO, 30th March, 1885.

HON. G. W. ROSS,
Minister of Education,
Education Department.

DEAR SIR,—We herewith take the liberty of making application for right to re-publish the new authorized "Canadian Drawing Course," and "Jeffer's Primer of Canadian History," also for a copy of the terms upon which these books may be re-published.

We have the honour to be, Sir,
Your obedient servant,

W. J. GAGE & CO.

EDUCATION DEPARTMENT,
TORONTO, 15th April, 1885.

DEAR SIRS,—Your application of 30th March last for the right to re-publish the new authorized "Canadian Drawing Course," and "Jeffer's Primer of Canadian History," was duly received. The terms on which these books may be re-published are in the printer's hands, and will be forwarded to you without delay. On compliance with the said terms, of course, you will be permitted to re-publish these books.

Yours, etc.,

GEO. W. ROSS.

W. J. GAGE & CO.,
Publishers, Toronto.

TORONTO, 30th June, 1885.

HON. G. W. ROSS,
Minister of Education,
Toronto.

DEAR SIR,—We have the assignments of copyright and bonds all ready for execution in the "Drawing Book" case, and the "History of Canada" case. We find, however, on inspecting the copyright held by the Canada Publishing Company of the "History of Canada," that it does not cover the edition adopted by your department. I have therefore asked Mr. Beatty to send down to Ottawa to get the present edition copyrighted. The bondsmen are Mr. A. B. Lee, and Mr. John Leys, who are the same bondsmen as in the Reading Book agreement. You will remember telling us that as to the Drawing Books you did not want any provision as to royalty in clause 16, but only a sum in gross should be fixed. Mr. Beatty objects to this upon the ground that if the clause as to royalty is struck out there will be no basis upon which the arbitrators could proceed to fix the sum in gross. He thinks when there is a certain percentage of royalty put in that there is some indication to the arbitrators as to their line of dealing with the question submitted, and some basis upon which they can find a sum in gross. We would suggest that it makes no difference at all to your department if the clause as to royalty is preserved, because you will notice that you still have the option for the sum in gross to be paid. In that view

of it will I, therefore, allow the clause to stand as printed? I enclose you a copy of what I submitted to Mr. Beatty with the clause as altered, so that you may understand the point he makes.

Would you also ask Mr. Alley to send me some more blank copies of agreement, bonds and assignments of copyright, and oblige,

Yours, etc.,

JOHN A. PATERSON.

TORONTO, 16th July, 1885.

HON. G. W. ROSS,
Minister of Education,
Toronto.

DEAR SIR,—We herewith enclose you agreement in duplicate in "*re* Canadian Drawing Course," Books 1 and 2, and in "*re* History of Canada," in all four copies. Be kind enough to execute one of each and return to us or to Mr. Beatty of the Canada Publishing Company. We also enclose you two bonds by the Canada Publishing Company, and Arthur Lee, and John Leys, one bond for "Canadian Drawing Course," Books 1 and 2, and the other for the "History of Canada." The assignments of copyright we have in duplicate, and have sent to Ottawa for registration, and when returned, will duly send them. We await your instructions regarding the other drawing books, and we think that now we have the agreement settled, after long negotiations, there will be no trouble in arranging the rest of the series.

Yours truly,

MACDONALD, DAVIDSON & PATTERSON.

THIS INDENTURE made in duplicate this thirteenth day of July, in the year of our Lord one thousand eight hundred and eighty-five,

Between

The Canada Publishing Company (Limited), hereinafter called the publishers of the first part,

and

Her Majesty the Queen, represented herein by the Honourable the Minister of Education for the Province of Ontario, acting for the Education Department of Ontario, of the second part.

Whereas the publishers have made application to the Education Department for the Province of Ontario, for the right to print and publish the "Canadian Drawing Course; Books I. and II.," for the use of the public schools in Ontario.

And whereas the said Department of Education have approved of such application, and have agreed to grant the said publishers the right to print and publish the said "Canadian Drawing Course, Books I. and II.," subject to the covenants and conditions hereinafter contained, and to the terms and conditions of the Regulations in that behalf, of the said Department of Education.

Now therefore this Indenture witnesseth, that in consideration of the premises and of the sum of one dollar of lawful money of Canada, the receipt whereof is hereby acknowledged, the said publishers do hereby for themselves, their successors and assigns, covenant with Her Majesty the Queen, her successors and assigns in manner following, that is to say :

1. That the publishers, their successors and assigns, shall from time to time and at all times observe, perform and fulfil each and every of the terms and conditions of the Regulations of the said Education Department, respecting the printing and publication of text-books, and also the terms and conditions hereinafter contained, and that each and every copy of each and every edition of the said "Canadian Drawing Course, Books I. and II.," shall in every particular be printed and published by the publisher in strict conformity therewith.

2. And that the publishers, their successors or assigns, shall submit, or cause to be submitted to the said Education Department sample copies of each and every edition of the said "Canadian Drawing Course, Books I. and II.," to be hereinafter printed and published, for sale or use in the Province of Ontario, for the approval of such Department as to the mechanical execution of the press work, binding and all other mechanical parts of the work, and that without such approval having been first had and obtained, no copy of any edition thereof shall be sold or disposed of for use in the said Province of Ontario. And, furthermore, in order to avoid causing any loss to the said publishers, their successors or assigns, arising from, or liable to arise from, any edition of the said "Canadian Drawing Course, Books I. and II.," not being approved of by the Education Department, owing to any serious defect or defects in any edition, and on that account condemned by the Education Department, and forbidden to be sold or issued to the schools or to the public, the said publishers, their successors or assigns, shall submit, or cause to be submitted to the Education Department for examination, sample sheets of the different forms of the book about to be printed, and specimens of the ink, paper, millboard, strawboard, cloth, mull, tapes, and other material proposed to be used by said publishers, their successors or assigns, in the printing and construction of the said "Canadian Drawing Course, Books I. and II.," together with a statement of the prices, weight, size, and other particulars necessary to judge of the relative quality of the different materials used or proposed to be used; and the approval of the Education Department shall be obtained in regard to the quality of the printing, paper, or other material proposed to be used before any work is proceeded with. And, furthermore, after sanction may have been given to the using of such material, or of such printing, presswork and binding, two sample copies at least of the book shall be submitted by said publishers, their successors or assigns, bound and finished in all respects *as proposed to be issued* by the said publishers, their successors or assigns, and without approval first had and obtained, no work in regard to binding said "Canadian Drawing Course Books I. and II.," shall be proceeded with.

3. And that the paper to be used in each and every edition of the said "Canadian Drawing Course, Books I. and II.," and in every copy thereof shall be equal in quality to the sample prescribed by the said Education Department (to wit, No. One quality, seventy pounds to the ream of 500 sheets, special size drawing paper, measuring twenty-nine inches by twenty-five inches, of good colour and texture, and super-calendered, or of such increased weight and improved quality as may be required by the Education Department in the future, but so that the cost of the same shall not be greater than the said sample prescribed as aforesaid, and no inferior quality of paper shall, under any pretext whatsoever, be used. The presswork and ink shall be first-class throughout, and shall be such as to produce, together with the plates, a clear and distinct impression; and the stitching and binding of each and every edition of the said "Canadian Drawing Course, Books I. and II.," and the material used therein shall be equal to the sample submitted to and approved of by the Education Department as aforesaid. The covers for "Books I. and II." shall be of calendered manilla, of good colour and texture, size twenty-five inches by twenty-nine inches, 500 sheets to a ream, weight of ream, eighty-five pounds. The books shall be stitched by Thompson's wire sewing-machine with wire staples, and shall consist of thirty-two pages each, exclusive of covers, and no departure from such specification shall be made without the sanction of the Education Department. And no copy of any of the said "Canadian Drawing Course, Books I. and II.," which does not in all particulars comply with the said foregoing in regard to paper, presswork, typography, ink and binding, shall be sold or disposed of for use in the Province of Ontario.

4. And that the said sample copies to be furnished as hereinbefore provided for, shall remain on file in the said Education Department, and each and every copy of each and every edition published, shall in all respects be equal to the sample copy so furnished to and on file in the said Department.

5. And that in case the Minister of Education points out to the said publishers, their successors or assigns, any defect or defects in the sample copies so furnished to the said Department as aforesaid, of not sufficient importance to cause him to withold his approval from such edition, then in such case the said publishers, their successors or assigns, shall in the next following edition or issue to that in which said defect shall have been pointed out, correct the same to the satisfaction of the said Department, but in case serious defects may be pointed out by the Minister of Education to the publishers, their successors or assigns, in any edition published by said publishers, their successors or assigns, and in case such edition be condemned by the Minister of Education as unfit for use in the schools, or for sale to the public, the condemned edition shall become confiscated, and shall, at the option of the Education Department, be delivered by the said publishers, their successors or assigns, into the custody of the Education Department for destruction or for safe keeping, until arrangements shall or may have been made for culling out any defective portion or portions, or in some way adjusting the matter.

6. And that the said "Canadian Drawing Course, Books I. and II.," shall be of the size following, that is to say, six inches by six and seven-eighth inches, and shall consist of thirty-two pages each, exclusive of covers. And that the said "Canadian Drawing Course, Books I. and II.," shall be sold at retail prices not exceeding the following, that is to say, the sum of ten cents for each copy.

7. And that in order it may be the more easily recognized and ascertained, that each and every book of each and every edition of the said "Canadian Drawing Course, Books I. and II.," to be published and in use in the said Province of Ontario, is not only authorized but approved as to its mechanical execution, contents, and otherwise, by the said Education Department, the publishers, their successors and assigns, shall cause to be printed upon the title page of each and every book of each and every edition of the said "Canadian Drawing Course, Books I. and II.," the name of the firm by which such book is published, and the words "*Authorized by the Minister of Education for Ontario*," or "*Authorized by the Education Department for Ontario*," or words to that effect, or bear upon the title page or cover of the book the official stamp of the Education Department.

8. And that the retail price af each and every book of each and every edition of the said "Canadian Drawing Course, Books I. and II.," shall be printed on the cover or title page thereof. No advertisement of any kind shall appear in any of the said books, or upon the covers of the said books, except such as are approved by the Education Department.

9. And that for the better securing the retail sale of the said "Canadian Drawing Course, Books I. and II.," at a price not exceeding that above set forth as the maximum retail price, the publishers, their successors and assigns, shall make the sale to any purchaser buying quantities of such "Canadian Drawing Course, Books I. and II.," of one dozen and upwards at one time, at prices at least twenty-five per cent. lower than the said prescribed retail prices on the usual terms of sale, and that to purchasers of the said "Canadian Drawing Course, Books I. and II.," in lots of the sale value of fifty dollars net, the said publishers, their successors and assigns, shall make a further reduction of ten per cent. in the price thereof, and in lots of the sale value of one hundred dollars net the said publishers, their successors and assigns, shall make a further reduction of ten per cent. in the price thereof, and that the said publishers, their successors and assigns, shall and will, from time to time and at all times, keep on hand a sufficient quantity of the said "Canadian Drawing Course, Books I. and II.," to supply all demands of the public and trade therefor.

10. And that the Minister of Education, or any person by him appointed in writing for that purpose, shall and may from time to time, and at any time during business hours, enter the warehouse and all other business premises or any part thereof of the publishers, their successors or assigns, for the purpose of inspecting any and every edition or issue of

such authorized "Canadian Drawing Course, Books I. and II.," and every copy thereof, and shall have a right to take sample sheets or other samples of material or sample copies of said books for the purpose of examination, if in his opinion it is necessary, and reporting to the said Education Department whether the same are in accordance with the terms of this Indenture.

11. And that in case the said Education Department shall at any time consider that the retail price of the said "Canadian Drawing Course, Books I. and II.," heretofore mentioned should be reduced, the Minister of Education and said publishers, their successors and assigns, may arrange, at the option of the Minister of Education, a reduced retail price and scale of discounts, or the Minister of Education shall appoint an arbitrator, the publisher shall appoint another, and the Chancellor of Ontario, upon the application of the Minister of Education or of the publisher, or the joint application of all parties hereto, shall appoint a third, and in case the publisher shall, for ten days after having been notified in writing of the appointment of an arbitrator by the Minister of Education, omit to appoint an arbitrator, or to notify the Minister of Education in writing of the appointment, then the Chancellor of Ontario may name two arbitrators to act with the arbitrator appointed by the Minister of Education; and the publishers, their successors and assigns, shall at any time and at all times when called upon so to do by the arbitrators or any two of them furnish the arbitrators with a detailed statement shewing the cost of production and the returns of the sales of any or all of the said "Canadian Drawing Course, Books I. and II.," and shall in addition, if so requested, furnish the said arbitrators, or any two of them, for inspection, all the vouchers and books which in any way refer to or contain any entry concerning the cost of production and returns of the sales of the said "Canadian Drawing Course, Books I. and II.," as aforesaid, and that if it shall be deemed by the said arbitrators, or any two of them, that an excessive profit is being made by the said publishers, their successors or assigns, upon the sale of the said "Canadian Drawing Course, Books I. and II.," the retail prices of the same shall be reduced to amounts which the said arbitrators, or any two of them, shall deem sufficient to yield a reasonable profit to the said parties, and such arbitrators, or any two of them, shall, upon such appointment, have full power to consider the question or questions submitted to them, and to examine all statements, vouchers and books furnished by the said parties, and full power to compel the production of such additional statements, vouchers and books to those furnished by the said parties, and the evidence of any kind whatsoever which they shall deem necessary, with power to examine witnesses upon oath, and their decision in the premises, or that of any two of them, when given in writing shall be conclusive and binding upon the parties hereto, and the retail price or prices so fixed shall thenceforward govern the price or prices by the dozen, and wholesale price or prices as hereinafter provided for.

12. And that the said publishers, their successors and assigns, will not print or publish, nor cause to be printed or published, nor be in any way accessory to the printing or publishing of any edition or copy or copies of the said "Canadian Drawing Course Books, I and II.," in the United States or anywhere else without the limits of the Province of Ontario, to be sold within the said Province of Ontario.

13. And that the publishers, their successors and assigns, shall not in any way, without the consent in writing of the Minister of Education acting on behalf of the Education Department, sub-let, re-let or assign any portion of the work of printing and publishing the said "Canadian Drawing Course, Books I. and II.," or the whole of such work.

14. And that should any difference of opinion arise between the parties hereto as to the construction to be put upon any of the terms, conditions and agreements herein contained, the same shall be determined by the Chancellor of Ontario, after giving the parties hereto an opportunity of presenting their views, in person or by counsel, and such determination shall be final and conclusive and binding upon the parties to this Indentnre, upon each of them and upon each of their successors and assigns.

15. And that upon the Minister of Education giving to the said parties six months notice, the Education Department may alter or amend the said "Canadian Drawing

Course, Books I. and II.," or any one of them or any part of any one of them ; but that no change shall be made by the publishers, their successors or assigns, in the contents of the said "Canadian Drawing Course, Books I. and II.," nor any addition thereto or omission therefrom, nor any notes or appendices thereto, nor any change in the subject matter thereof, nor in the size of the books, nor in the price of any of them, nor in the mechanical execution thereof, without the consent in writing of the said Education Department first had and obtained. The notice hereinbefore provided for may be given by publication thereof in two issues of any newspaper published in the City of Toronto and in the *Ontario Gazette*.

16. And that the publishers, their successors or assigns, shall have the sole right to print and publish within the said Province of Ontario and Dominion of Canada the aforesaid authorized "Canadian Drawing Course, Books I. and II."

Provided always, however, than any other publisher shall have the right of publication at any time, by permission to be obtained from the Department of Education for Ontario, subject to a royalty of ten per cent. on the retail price, as at first issued or afterwards reduced, of each and every book of said "Canadian Drawing Course, Books I. and II.," published by the said other publisher, to be paid to the publishers of the First Part as long as re-published, and subject to a proper allowance to cover cost of authorship and other necessary expenses on the preparation of the said books, to be settled as hereinafter provided, and to be paid to the publishers of the first part, or at the option of the Department of Education for Ontario a sum in gross may be paid in lieu of such royalty, and allowance and expenses, the amount of the said allowance and expenses or sum in gross, to be settled by the Minister of Education and the publishers of the first part ; or at the option of the Minister of Education by three arbitrators, one of whom shall be appointed by the Minister of Education, one by the said party of the first part, and the third by the publisher desiring the said right of publication ; or if more than one publisher applies at the same time for the said right, then the third arbitrator shall be appointed by the publishers so desiring the said right. And in case either or both of the said phblishers so concerned shall, for ten days after having been notified in writing of the appointment of an arbitrator by the Minister of Education as aforesaid, omit to appoint an arbitrator or to notify the Minister of Education in writing of his appointment, then the Minister of Education may appoint the other arbitrator or arbitrators so omitted to be appointed, and the said arbitration when so finally constituted shall have full power to consider the matters in question, and to examine all statements, vouchers and books furnished by the said parties, and the evidence of any kind whatsoever which they shall deem necessary, and to examine witnesses upon oath ; and their decision in the premises or that of any two of them when given in writing shall be conclusive and binding upon the parties concerned, and the costs, charges and expenses of such arbitration shall fall upon and be borne by the publishers so desiring to republish. Provided also that after any arbitration has been held as aforesaid, and the rights of the parties concerned have been settled thereby, if any other publisher or publishers should desire the said right of publication, then the Department of Education shall, if they think it proper to accord said right, give instructions as to the manner in which the said questions of the sum in gross or of the royalty should be settled by and between the parties interested therein.

18. And the publishers, their successors and assigns, hereby agree that if they, their successors or assigns, or any of them, deliberately disregard the terms of this agreement, or fail to carry out the same in a matter of substance, the said party or parties shall forfeit all his or their rights under this agreement, and the Minister of Education may apply, on notice to the said party or parties, to any Division of the High Court of Justice for a declaration of such forfeiture, and to restrain such party from further printing, publishing or selling any of the books of the said "Canadian Drawing Course, Books I. and II."

19. And that before any edition of the said "Canadian Drawing Course, Books I. and II.," is printed and published by the publishers, they shall have executed these presents, and given to the Honourable the Minister of Education as representing Her Majesty the Queen herein, a bond in the penal sum of five thousand dollars, with two

sureties thereto each, in the sum of two thousand five hundred dollars for the due observance and fulfilment by the publishers, their successors and assigns, of all the terms, conditions, clauses, agreements, obligations and covenants herein contained, and also of the Regulations of the Education Department respecting text-books for use in the public schools, as the same now are or from time to time may be in force.

20. It is understood and agreed between the parties hereto that this agreement is entered into subject to the approval of His Honour the Lieutenant-Governor, of the Province of Ontario, in Council.

In witness whereof the parties hereto have hereunto set their hands and seals the day and year first above written.

Signed, Sealed and Delivered in the Presence of

SEYMOUR PORTER.

For the Canada Publishing Co. (Limited),

ARTHUR B. LEE,
President. [Seal.]

KNOW ALL MEN BY THESE PRESENTS:

That the Canada Publishing Company (Limited,) hereinafter called the publishers, and Arthur B. Lee, of the City of Toronto, in the County of York, merchant, and John Leys, of the same place, merchant, hereinafter called sureties, are jointly and severally firmly bound unto Her Majesty the Queen in the sums following, namely, the said publishers in the sum of five thousand dollars, and the said Arthur B. Lee and John Leys each in the sum of two thousand five hundred dollars, to be paid to Her Majesty the Queen and her successors, for which payment to be well and truly made we severally bind ourselves, our executors and administrators by these presents. Sealed with our seals and dated this thirteenth day of July, in the year of our Lord one thousand eight hundred and eighty-five.

Whereas the publishers have obtained from the Minister of Education, representing the Education Department of the Province of Ontario, the right to print and publish "The Canadian Drawing Course," elementary freehand, object, constructive and perspective drawing books, one and two, prepared and authorized by the said Education Department, for use in the Public Schools of the Province of Ontario, under and subject to the terms and conditions of the annexed indenture of agreement, dated the thirteenth day of July, one thousand eight hundred and eighty-five.

Now the condition of the above obligation is such, that if the said publishers, their successors and assigns, do and shall observe, perform and fulfil the terms and conditions of the said indenture of agreement, and the regulations of the Education Department respecting text-books for use in the Public Schools as the same now are or may from time to time be in force, and if the several copies of the said books so printed shall in paper, printing, binding and other qualities conform to the said indenture of agreement, and if the said books so printed shall be sold by the said publishers so that the retail price of each copy thereof, for use in the Public Schools, shall not exceed the maximum sum fixed by the said indenture of agreement; and if the said publishers do and shall observe, perform and fulfil as to each copy of the said book each and every of the terms and conditions of the said indenture of agreement, then these presents shall be void, otherwise to remain in full force.

Signed, sealed and delivered in the presence of

SEYMOUR PORTER.

For the Canada Publishing Co. (Limited,) [Seal.]

ARTHUR B. LEE,
President.

ARTHUR B. LEE. [Seal.]

JOHN LEYS. [Seal.]

THIS INDENTURE, made in duplicate this thirteenth day of July, in the year of our Lord one thousand eight hundred and eighty-five,

Between the Canada Publishing Company (Limited,) of the first part,

and

Her Majesty the Queen, represented herein by the Honourable the Minister of Education for the Province of Ontario, acting for the Education Department of Ontario, of the second part.

Whereas the said parties of the first part have, by a certain indenture made upon the thirteenth day of July, in the year of our Lord one thousand eight hundred and eighty-five, acquired from the said party of the second part, the right to publish the "Canadian Drawing Course, Book I," under conditions and restrictions fully set out in the said indenture.

And whereas the parties hereto have agreed to execute this indenture so that the copyright in the said "Canadian Drawing Course, Book I" may be properly vested in the said party of the second part.

Now therefore this indenture witnesseth that the parties of the first part, in consideration of the premises, and in further consideration of the sum of one dollar of lawful money of Canada to said parties of the first part paid by the said party of the second part, the receipt whereof is hereby acknowledged, have conveyed, assigned and transferred, and by these do convey, assign and transfer unto the said party of the second part, her successors and assigns, all and any right, title or interest, property, claim or demand, or right of proprietorship which they may possess, or in any way be entitled to, of, in, or to the copyright of the said "Canadian Drawing Course, Book I," which said copyright was upon the nineteenth day of February, 1885, duly registered in folio 2515 of Register of Copyrights No. 12, in the Department of Agriculture (copyright and trade-mark branch,) at the City of Ottawa;

To have and to hold the same to the said party of the second part, her successors or assigns, with full power and authority to her over the copyright in the said "Canadian Drawing Course, Book I";

And to have the sole right and liberty of printing, re-printing, publishing and vending the same, reserving, however, to the said parties of the first part the rights over the said "Canadian Drawing Course, Book I," provided for and contained in the said indenture of the thirteenth day of July, one thousand eight hundred and eighty-five.

In witness whereof the parties hereto have hereunto set their hands and seals the day and year first above written.

Signed, sealed and delivered in the presence of } For the Canada Publishing Co. (Limited.)

SEYMOUR PORTER. } ARTHUR B. LEE, [L.S.] President.

THIS INDENTURE, made in duplicate this thirteenth day of July, in the year of our Lord one thousand eight hundred and eighty-five,

Between the Canada Publishing Co. (Limited,) of the first part,

and

Her Majesty the Queen, represented herein by the Honourable the Minister of Education for the Province of Ontario, acting for the Education Department of Ontario, of the second part.

Whereas the said parties of the first part have, by a certain indenture, made upon the thirteenth day of July, in the year of our Lord one thousand eight hundred and eighty five,

acquired from the said party of the second part the right to publish "The Canadian Drawing Course, Book II," under conditions and restrictions fully set out in the said indenture:

And whereas the parties hereto have agreed to execute this indenture so that the copyright in the said "Canadian Drawing Course, Book II," may be properly vested in the said party of the second part.

Now, therefore, this indenture witnesseth that the parties of the first part, in consideration of the premises, and in further consideration of the sum of one dollar of lawful money of Canada to said parties of the first part, paid by said party of the second part, the receipt whereof is hereby acknowledged, have conveyed, assigned and transferred, and by these do convey, assign and transfer unto the said party of the second part, her successors and assigns, all and any right, title or interest, property, claim or demand, or right of proprietorship which they may possess, or in any way be entitled to, of, in or to the copyright of the said "Canadian Drawing Course, Book II," which said copyright was upon the second day of March, 1885, duly registered in folio 2533 of Register of Copyrights No. 12, in the Department of Agriculture (copyright and trade-mark branch,) at the City of Ottawa:

To have and to hold the same to the said party of the second part, her successors or assigns, with full power and authority to her over the copyright in the said "Canadian Drawing Course, Book II;"

And to have the sole right and liberty of printing, re-printing, publishing and vending the same, reserving, however, to the said parties of the first part the rights over the said "Canadian Drawing Course, Book II," provided for and contained in the said indenture of the thirteenth day of July, one thousand eight hundred and eighty-five.

In witness whereof the parties hereto have hereunto set their hands and seals the day and year first above written.

Signed, sealed and delivered in the presence of } For the Canada Publishing Co. (Limited,)

SEYMOUR PORTER.

ARTHUR B. LEE, [Seal.]
President.

TORONTO, August 3rd, 1885.

HON. G. W. ROSS,
Minister of Education,
Toronto,

DEAR SIR,—I enclose you herewith assignments of copyrights of the following, the "Canadian Drawing Course," books 1 and 2, and the "History of Canada." They have attached to them the letters of advice from the Minister of Agriculture as to the registration of the original copyright. These assignments are, as you see, duly registered. In my last letter, dated 16th July, in which I enclosed the original assignments signed by the Canada Publishing Co., I forgot to mention that I discussed with Mr. Beatty the point as to having the drawing books bound with three wire staples. I pointed out to him that the reading books seemed to have three wire fastenings, which he readily admitted, but at the same time explained to me that the reading books were bound by a different machine from the wire staple machine, and I verified that by examination. I found that the machine used for binding the drawing books and copy books was quite different in construction, and would only permit of two staples being used and not three. I found that all the copy books were bound with two wire staples, and acting under the discretion you allowed me, in allowing him to use the two wire staples, I settled it with him in that way, as it seemed to be impossible for him to put the three wire staples in, and then it seemed that the two were sufficient for the purpose of that particular binding. I do not think that you sent me the copy of the agreement for Mr. Beatty, or perhaps you have sent it to him.

Yours etc.,

JOHN A. PATERSON.

OFFICE OF THE CANADA PUBLISHING CO.,
TORONTO, October 28th, 1885.

To the Hon.
THE MINISTER OF EDUCATION.

SIR,—We beg respectfully to address the following observations for consideration with regard to the terms of agreement for the surrender of the copyright of the "Canadian Drawing Course," and the conditions proposed for permission to other publishers to publish it, as embodied in the remodelled form of indenture recently submitted to us.

We considered the matter finally disposed of when, after waiting upon you and your solicitor many times and fully discussing the whole question, we arrived at a basis of settlement and signed your agreement. We were therefore surprised when, at a meeting of our directors called for the purpose of re-considering this agreement, your new indenture asking the surrender *in toto* of all our rights without compensation of any kind was placed before us.

1. We offer no objections to any of the clauses having for their object the securing of excellence of workmanship, uniformity of price, adherence to the standard of style and finish, and in general whatever may be requisite for the production of superior and excellent text-books.

2. Inasmuch as it is possible, though highly improbable, that from unintentional accident or oversight, or misapprehension, an edition, or a part of an edition, might be published differing so far from the specification as to be condemned by the Minister of Education, we consider that such edition or part thereof should be withdrawn from sale for use in the Province of Ontario, but that it should *not* be "confiscated" nor "delivered into the custody of the Education Department to be destroyed." "The Canadian Drawing Course" is sold in the other provinces of the Dominion, and an edition might be suitable for use in these provinces, though not meeting *all* the requirements and technical specifications of your Department, so that the possible interference with our trade outside the province and the destruction of our property, allowed by clause five of the indenture submitted, seem to us to be unjust and unnecessary.

3. A rigid adherence to the letter of the last two lines of clause nine might lead to a cancellation of the indenture, notwithstanding all our efforts to comply with the general spirit of the whole. We would suggest that the words "the probable" be substituted for the word "all" in the last line of said clause.

4. Clause 13 prejudicially affects our standing as a business firm by rendering our assets unavailable. While we have the most implicit faith in the Minister not desiring or intending to put us in a false position, and while we have not the least intention of making any such assignment as that contemplated in the indenture, yet, the very fact of our being unable to do so without his consent must injuriously affect our interests, and place him in position of unduly influencing our trade relations. (*Vide* also 20 and 21).

5. Clause 14 appears to us to be putting too much power into the hands of the Crown as touching this indenture,—by investing the Ministry of the day with the powers of a judge, in the person of the Hon. the Attorney-General of Ontario, in a case in which the Ministry is itself one of the interested parties in the person of the Hon. the Minister of Education.

6. Clause 17 seems to make it possible that we should forfeit all our rights in these books as a consequence of the ignorant or malicious failure of any other publisher (to whom the right to publish them might be granted by the Department) to comply with the requirements of the indenture. It thus renders us liable to a heavy penalty for faults over which we could have no control.

7. Clause 19 contains a notice of limitation too short for any book, and especially so for this Drawing Course. Such arbitrary power in the hands of a Minister is calculated to paralyze the efforts of publishers and authors and to prevent the production of original works. The authorization may be cancelled in one year after we surrender our copyright, for the Dominion to the Education Department, and our rights to other publishers.

8. We have very strong and well founded objections to clause 16 whether relating to the publication of this series of drawing books or to any other books of which we had secured the copyright in the first instance; and we are confident that any other publishers in Canada would, under similar circumstances, entertain even stronger objections to the provisions of this clause as being at once impolitic and unjust, seriously compromising vested rights and interests, and having paralyzing effects on the publishing industry. We will confine our remarks to the clause as it affects the Drawing Course, though *mutatis mutandis,* they are equally applicable to other books published by ourselves or by others in the province.

The clause as it now stands proposes, on the award of a court of arbitrators to give to other publishers the right to publish a work produced by us at a very large expenditure of time, and money, and labour, and skill. It places the incoming publisher on the same footing as ourselves, although but for our exertions and enterprise the book would never have been in existence at all. It compels us to throw a property which we have created into the lottery of an arbitration where we may draw only a blank, but can never hope to draw a decision giving us even a moiety of what we should be entitled to on any equitable grounds. It *fixes no minimum, nor medium, nor maximum whereby the court may be guided to a fair decision.* And it not only compels us to put the fruit of our labour into a lottery, but it compels us to pay for the privilege of so doing, by saddling on us such a portion of the *costs of arbitration* as the court may agree upon. It proposes also to give incoming publishers the right of publication not only in Ontario but throughout the whole Dominion as well, for the copyright covers the Dominion though *the jurisdiction of the Minister and of the court of arbitration does not extend beyond Ontario.*

In estimating the pecuniary value that ought to be set on the right to republish these books there are several things that are not indicated in the clause, though they ought in equity to be taken into consideration. In the preparation of these books we have employed all the *business sagacity, special knowledge,* and general *fitness for the undertaking* which are essential to the successful issue of such an enterprise, and which we have only acquired as the result of *many years' experience,* and of *the investment of large sums of money in the publishing business.* The clause takes no account whatever of all this, and does not propose any payment whatever to be made to us for the benefits obtained from our business experience and sagacity, though the production of such books is utterly impossible without these conditions.

In the general course of our business and in the special efforts put forth by us in the preparation of our books, we have, at considerable pains and expense, formed a wide circle of connections peculiarly fitted for such a task; we have established relations with specialists and have induced them to undertake these task by availing ourselves of our acquaintanceship with them, our acquired knowledge of them, and such other motives as could be brought to bear; we have utilized every means at our disposal, and have thus exhausted all the artistic resources specially at our command in the production of these books. Without these special resourses and facilities it would have been impossible to produce them, and it prevents us from preparing another series for any other province; and yet the indenture does not propose to take into account these personal and business connections acquired and possessed by us as the outcome of years of trouble, experience, and expense devoted to this object. It proposes to put on the same level with ourselves any mere mechanical printer; to give him the benefit of our dearly bought experience, and to place at his disposal the services and labours that he could not otherwise procure without a very large expenditure.

The clause takes no account of the large preliminary expenditure incurred in preparing for the production of the books. A large correspondence had to be maintained with experts in different localities; hundreds of miles had to be travelled by our business manager and others in securing interviews with leading educators and specialists in the United States and other places; consultations had to be held with artists, engravers, paper-makers, etc., etc.; and all this and much more had to be done before even the general plan of the work could be outlined. In the actual production of the work a large amount of labour, and trouble, and anxiety had to be encountered, of which it would be impossible to give the details, and for which no *recompense whatever would be awarded by*

a Court of Arbitrators. Much of the expense incurred—and of which even the minutest detail might possibly be given—would not be considered by the arbitrators as a "necessary and proper expense." Such as the cost of experimenting in the most suitable style for engraving the plates, whether on wood, metal, or wax, the cost of re-engraving many cuts, of re-electrotyping many plates, re-setting much of the letter-press, and re-arranging the exercises and descriptive portions of the work, with the endless running to and fro of our manager and other employees, and the constant drain of expense involving an outlay of thousands of dollars before even the first perfect copy could be produced for submission to the Minister of Education. Every one who has gone through the process of producing a new text book knows perfectly well that these and other items of expenditure of time, labour, and money, are inseparable from the original production though they do not enter at all into the subsequent publication. To compel an enterprising publisher who has taken all these risks in the hope of having his books authorized, to throw the fruits of his labour into the lottery of an arbitration, without securing to him the certainty of adequate compensation, would place him at such a disadvantage with others in the trade that it would certainly result in the collapse of all publishing enterprise. No publisher would be willing to take the risk and incur the expense of original production.

Each would be in waiting for some other to do all the heavy, costly, and uncertain work, and when the books were produced and introduced into the schools, and a demand created that would yield immediate returns, he would step in on the strength of an arbitration and carry off the reward which ought in equity to belong to the other.

Not only is there no basis of compensation indicated for the consideration of the arbitrators, but there is no tangible basis of ownership, or proprietary rights, to form a starting point. Before the question can be submitted for arbitration, the original publisher, the creator of the copyright, must have transferred his rights, not only for Ontario, but for the whole Dominion, to the Minister—so that he is compelled to go before the Court without being able to show that he is possessed of any proprietary rights for which he might demand compensation. Obviously he is placed entirely at the mercy of the Court, and is forced to accept whatever terms may be awarded to him. He has *nothing whatever to gain, but everything to lose* ; while his rival occupies the singularly advantageous position of having *everything to gain and nothing to lose*, no matter what may be the award. He has run no risk, incurred no expense; he has simply done nothing but wait till the original publisher had done all, and then he steps in and shares the profits.

The award of the arbitrators would not only allow rival publishers to compete with us in Ontario, but as the copyright is for the whole Dominion it enables them to undersell us in the other provinces, by publishing a cheap edition for sale there. As they have had no preliminary expense, in the way of travelling through these provinces to procure the opinions of educators recommending the books to the authorities, and as the award can only take the cost of production for Ontario into account, it is evident that a competitor could well afford to sell for a less price than we could in the other provinces.

In all cases of publication the publisher looks to the profits secured him by his copyright for the means of re-imbursing himself for the cost and risk, and out of this fund he has to defray the expenses of authorship, publication, travelling expenses, presentations of sample books, sale and interest. The profit accruing from the sale of one book enables him to bear the losses arising from the publication of another ; and it is only by the expectation of profit secured by his copyright that he is induced to incur the risk of bringing out the works of authors, new or well-known ; but in the case of school books the publisher has to undertake the expense of production, remuneration to authors, etc., at the risk of not having the book authorized at all for Ontario, in which case he must look to the other provinces. If by the production of an excellent work he secures authorization and his copyright becomes valuable, he is (by the indenture) compelled to share with others, who had incurred no risk or expense, the profits by which he had hoped to be able to carry on his business, and in some degree to diminish the dead loss incurred by the publication of books for which he had failed to secure authorization. By the stipulations of the indenture he is asked to bear all losses, run all the risks, and at last when he has secured the chance of realizing some reward for his enterprise he is compelled to waive all his rights and allow outsiders to come in without being assured that he is to receive anything like adequate

compensation for the privilege. He must resign his rights not only in Ontario, but all the other provinces of Canada, where but for his assignment to the Minister he would have enjoyed them exclusively for the full period covered by the copyright and not merely for the uncertain period, which may be cancelled in one year, covered by the agreement with the Minister.

Moreover he is asked to assist in defraying the costs of the arbitration. As it is evident he can have nothing to gain from the arbitration, and cannot possibly have any reason for desiring the appointment of a court to assign away his rights and privileges, it would certainly seem *preposterous that he should be asked to pay for the machinery employed in doing him an injury.* Not only should all the costs of the arbitration be defrayed (in advance) by the publishers applying for leave to share in profits to which they have no legal or equitable claim, but the original publisher, and suchof his employees as may be required, should be paid for their attendance at the court as witnesses and for whatever work they may be called upon to perform for the information and use of the arbitrators.

In case a third or fourth publisher should apply and receive permission from the Minister to publish these books, it is evident that the profits of the original publisher will thereby be proportionately diminished and his property depreciated in value. The clause (16) does not propose to allow any award for extra remuneration for such depreciation—it merely arranges for the award of whatever the arbitrators may choose to allow, and then reserves to the Minister the power of determining the apportionment of said sum.

It appears to us that the only fair basis of settlement in such cases as are contemplated would be :—

(*a*) The cost of arbitration to be borne by the applying party.

(*b*) The payment in advance of a sum to be determined by the arbitrators, by the applying publisher to the original party as his contribution towards the incidental losses incurred in the preparation.

(*c*) A publisher's royalty of not less than ten per cent. of the retail price of each book to be paid by the applying party to the original publisher, or its equivalent in a lump sum to be settled by the arbitrators.

We have the honour, etc.

FOR THE CANADA PUBLISHING CO. (Limited).
S. G. B.

TORONTO, October 30th, 1885.

To the Honourable
THE MINISTER OF EDUCATION.

SIR,—We beg to supplement our observations of yesterday, relative to the surrender of copyrights, without compensation, with the following remarks :—

1. The demand of the Crown to exercise the right of arranging the terms of admission to the privilege of re-publishing works of which we hold the copyrights for the Dominion, is based on the assumption that what stamps the copyright of a text book with its pecuniary value is *the authorization of the book for use in the schools of Ontario.* This is probably true in so far as it relates to a series of Readers, but it does not hold in reference to other text books. Readers differ from other books in several respects. Every pupil must procure the authorized Reader ; no other book, however excellent, can take its place ; they are not works of interest to students or the general public ; they have no *outside market :* can only be sold, or used, where they are authorized ; and whatever their intrinsic merit may be their pecuniary value depends almost entirely on their authorization. But with other text books the case is different. Their authorization by the Minister largely increases the value of the copyright *in Ontario*, but *does not create that value.*

The pecuniary value of the copyright depends very largely on the intrinsic merit of the books themselves, and by no means exclusively on their authorization by the Minister.

Authorization unquestionably enhances this value and gives the Minister the right to frame stringent regulations for the purpose of securing uniformity, cheapness, and excellence in the production.

The indenture calls for the surrender of all our rights as though our copyright had no pecuniary value whatever prior to authorization.

2. The value of our copyright in the other Provinces does not depend on their being authorized in Ontario, and after years of experience as publishers we know, and our sales book proves to us, that many of our publications (authorized as well as unauthorized) have a much larger sale outside this Province than they have here. We might instance Campbell's Geography and Edith Thompson's History, both authorized books, and published by us as such for years.

While we print only 10,000 a year of the former for Ontario, our aggregate sales are over 25,000. The latter although not so largely used in schools, shows about the same proportionate result. Other instances establish the same fact that the pecuniary value of many copyrights is not greater in this Province than it is elsewhere.

3. That the value of copyrights is not created by authorization will still further appear from the fact that even in Ontario many books command a large sale, though not authorized. They are used in the R. C. Separate Schools, denominational and other colleges, in academies, colleges and schools for young ladies, and in boarding-schools and other institutions of a private character. Public school teachers and private individuals purchase them; and even the pupils of the Public Schools use them largely, not only at home but even in the school-room, where they keep them in their desks as books of reference. There is a ready demand not only for useful books—goods of their kind but not suitable for authorization as text books—but even *cram* books, books prepared avowedly for the purpose of "cramming" for examinations, are used so largely in our schools (ostensively as reference books) that they have in some cases almost excluded the authorized text book on the same subject. We know of an unauthorized book of this nature on geography which has for some years commanded a sale of 40,000 copies annually—four times that of the authorized book in Ontario—while unauthorized outlines of history, English and Canadian, are now used in nearly every school throughout the Province.

4. Seeing that comparatively worthless text books, compiled on a vicious principle of education, so readily find their way into the hands of the pupils, it may safely be laid down as an axiom that should any better books than ours appear they would easily displace them and exclude them from the schools, to a great extent, while the owner of said books would hold his copyright exclusively.

Your obedient servants,

FOR THE CANADA PUBLISHING CO., (Limited),
S. G. BEATTY, Manager.

TORONTO, February 19th, 1886.

MY DEAR SIR,—A copy of No. 2 Drawing Book, second edition, was submitted to me to-day. It contains several mistakes of such a serious character that either the whole edition must be withdrawn from sale or else certain corrections must be made which will remedy the defects complained of. I cannot understand how this large edition was struck off without the approval of the Education Department being first secured. Such mistakes as have occurred in this number will destroy the value of the book, and damage irreparably your reputation, and the standing of the Department unless corrected. Try and see me immediately.

Yours, etc.,

G. W. ROSS

S. G. BEATTY, Esq., Toronto.

EDUCATION DEPARTMENT,
TORONTO, March 14th, 1885.

GENTLEMEN,—The Honourable the Minister of Education requests that you will furnish him with a copy of the latest edition of each authorized text book published by you, whether on the High or Public School Text Book List, for the purpose of comparison with the sample on file, and for examination under the Regulations governing the publication of authorized text books in Ontario.

Your obedient servant,

ALEX. MARLING.

The above was sent to the following firms:—

Messrs. Copp, Clark & Co., Toronto.
The Canada Publishing Co., Toronto.
Messrs. W. J. Gage & Co., Toronto.
Mr. John Lovell, Montreal.
Messrs. Jas. Campbell & Sons, Toronto (for his successors in publishing the authorized text books formerly issued by them).
Messrs. Wm. Warwick & Sons, Toronto.
Messrs. Barber & Ellis, Toronto.

TORONTO, March 18th, 1885.

ALEX. MARLING, Esq.,

DEAR SIR,—Seeking to comply with your favour of 14th inst., as to samples of authorized text books we are unable to find a list of them, and with reference to one or two of our books we are really not sure if they are on the authorized list, if therefore you will kindly furnish us with a list we will at once forward those required.

Yours very respectfully,

COPP, CLARK & CO.

TORONTO, 19th March, 1885.

HONOURABLE SIR,—In compliance with your request by circular, dated 14th inst., we herewith transmit a copy of each of the authorized school text books now in stock, and which were formerly published by the late Mr. William Warwick.

Owing to a general misunderstanding by which the new Readers were looked for towards the end of last year, an unexpected demand for the First Book sprang up, and we, to fill the gap, issued a small edition, part of them in paper covers only, as there were no other books to be had; even this small number would not have been sent out but for the fact that we had in stock no suitable cloth, and at the moment could not procure any in time for the then pressing demand.

We do not intend to print any more of the old Readers, as we believe few, if any, will be required.

We have the honour to be, Sir,
Your obedient servants,

WM. WARWICK & SON.

To the Honourable
G. W. Ross,
Minister of Education.

EDUCATION DEPARTMENT,
TORONTO, 24th March, 1885.

GENTLEMEN,—Herewith you have the list of authorized books as desired in your favour recently received.

Your obedient servant,

ALEX. MARLING.

Messrs. COPP, CLARK & Co.,
Publishers,
Toronto.

TORONTO, 31st March, 1885.

GENTLEMEN,—I am directed by the Honourable the Minister of Education to acknowledge the receipt of the following specimen copies of text books submitted for examination and comparison with samples on file in the Department:

Smith & McMurchy's Elementary Arithmetic
" Advanced "
Loudon's Algebra for Beginners.
" Elements of Algebra.
Todhunters Algebra for Beginners.
" Euclid for Schools and Colleges.
Ryerson's Agriculture.

There are other text books in use in our High Schools bearing, we believe, your imprint, though perhaps not published by your firm. Samples of these are also desired, or if not now issued with your imprint, an explanation in regard thereto.

The books referred to are the following:

Harkness' Latin Grammar.
" First Greek Book.
De Fivas' Grammaire des Grammaires.
Ahus Grammar (German).
Pillon's First Steps in Classical Geography.
Gray's How Plants Grow.

If there are any others in a similar position, please send samples.

Your obedient servant,

ALEX. MARLING.

Messrs. COPP, CLARK & Co.,
Publishers,
Toronto.

TORONTO, 2nd April, 1885.

ALEX. MARLING, ESQ.,
Secretary Education Department.

DEAR SIR,—We beg to acknowledge the receipt of yours of 31st March, No. 1807 V. With reference to the High School text books having our imprint, but not published by us, we would reply as follows:

Harkness' Latin Grammar.
" First Greek Book.
Ahus Grammar (German).
Pillon's First Steps in Classical Geography.
Gray's How Plants Grow.

The demands for these having greatly decreased (the two last named almost entirely ceased,) we have not for some time imported editions of them, only a few from the regular stock of the publishers as we had need.

De Fivas' Grammaire des Grammaires.

This we still import in editions, and the publishers have our order for a quantity now; will send you a copy when received; we have not one in stock at present.

Your obedient servants,

COPP, CLARK & CO.

TORONTO, 6th April, 1885.

ALEX. MARLING, M.A., LL.D.,
Secretary Education Department.

DEAR SIR.—In answer to yours of the 14th March, requesting sample copies of authorized text books, published by us, we have pleasure in forwarding the accompanying parcel, containing:

Mason's Short Grammar.
Hamblin Smith's Geometry.
Mason's Outlines of English Grammar.
Millers' Swinton's Language Lessons.
Hamblin Smith's Statics.
" Hydrostatics.
Epoch Primer of English History.
Hamblin Smith's Algebra.
Lewis' How to Read.
Gage's Standard Book-keeping.
Kirkland's Statics.
Macoun's Botany.

Several others, including Hamblin Smith's and Kirkland & Scott's Arithmetics, and Mason's Grammar, are on the press or in the bindery, and we will furnish at an early date.

Yours faithfully,

W. J. GAGE & CO.

EDUCATION DEPARTMENT, 13th June, 1885.

SIR,—I am considering the propriety of revising the list of text books authorized for use in the High Schools, and would be happy to consider the suitability of any books on your catalogue if they are placed in this Department at an early day. The subjects in which text books are authorized are the following:

English, Latin and Greek, French and German, Mathematics, History, Geography and Antiquities, and Physical Science generally.

Yours truly,

G. W. ROSS,
Minister of Education.

COPP, CLARK & CO.
CANADA PUB. CO.
W. J. GAGE & CO.
WM. WARWICK & CO.
METHODIST BOOK & PUB. CO.
HUNTER, ROSE & CO.
} Toronto.
GINN, HEATH & CO., Boston.

American Text Book Publishers.

D. Appleton & Co., 1-3-5 Bond St., New York.
A. S. Barnes & Co., 111-113 William St., New York.
E. H. Butler & Co., Philadelphia.
W. S. Fortescue & Co., 811 Arch St., Philadelphia.
Ginn, Heath & Co., 9-13 Tremont Place, Boston.
Harper Bros., Franklin Square, New York.
Henry Holt & Co., 29 West 23rd St., New York.
Houghton, Miffin & Co., 4 Park St., Boston.
J. B. Lippincott & Co., Philadelphia.
G. P. Putnams' Sons, 27-29 West 23rd St., New York.
C. Scribners' Sons, 743-745 Broadway, New York.
Tower, Potts & Co., Philadelphia.
University Publishing Co., 19 Murray St., New York.
Van, Antwerp, Bragg & Co., Cincinnati.
John Wiley & Sons, 15 Astor Place, New York.
Geo. Sherwood & Co., 307-309 Wabash Ave, Chicago.
T. Ellwood Zell, 47 N. 13th St., Philadelphia.
Macmillan & Co., 112 4th Ave., New York.

English Text Book Publishers.

Geo. Bell & Son, York St., Covent Garden, London.
David Bagne, 3 St. Martins Place, Trafalgar Square, London, W.C.
Cassells, Petter & Galpin, London.
W. & R. Chambers, Edinburgh.
J. & A. Churchill, New Burlington St. W., London.
Clarendon Press, Oxford.
W. Collins' Sons & Co, Glasgow.
Chas. Griffin & Co., Stationers' Hall, London.
Groombridge & Co., Paternoster Row, London.
J. Hall & Son, Cambridge.
J. Heywood, 11 Paternoster Buildings, London.
Wm. Isbister, 56 Ludgate Hill, London.
Jarrold & Sons, London.
Crosby, Lockwood & Co., 7 Stationers' Hall Court, London, E.C.
Longmans Green & Co., 39 Paternoster Row, London.
Samson, Law, Marston & Co., 188 Fleet St. London.
Macmillan & Co., 29-30 Bedford St., Strand, London.
Thos. Murky, 32 Bouverie St., Fleet St., London, E.C.
T. Nelson & Sons, London, E.C.
David Nutt, 270 Strand, London.
Jas. Parker & Co., London.
C. Kegan, Paul & Co., 1 Paternoster Square, London.
Geo. Philip & Son, 32 Fleet St., London.
Sounerschein & Allen, Paternoster Square.
Scribner & Co., 57-59 Ludgate Hill.
Rivingtons, London, England.
J. Murray, London, England.
Oliver & Boyd, Edinburgh.
Hachette & Co., London England.
Religious Tract Society, 56 Paternoster Row, London, England.
W. Blackwood, London & Edinburgh.
Blackie & Sons, 49-50 Old Bailey, London, E.C.

54 Front St. West,
Toronto, June 30th, 1885.

Hon. G. W. Ross, L.L.B.,
Minister of Education,
Education Department.

Dear Sir,—We duly received your favour with reference to authorization of books for High Schools. We would take the liberty of placing before you for consideration, our Geography Primer, for examination, with a view to authorization; also, Elementary Physics, by A. P. Gage, English High Schools, Boston, Mass. Should the latter book be favourably considered, we could place upon the market an edition somewhat smaller in size, and sold at fifty cents.

We have, etc.
W. J. GAGE & CO.

Department of Agriculture,
Copyright and Trade Mark Branch.
Ottawa, Canada, 20 March, 1886.

Sir,—I beg to forward you the herewith enclosed Certificate of Registration of the copyright of the book called "The High School Music Reader," No. 2,556.

I have, etc.,

JNO. LOWE *per* J. B. J.
Acting Deputy-Minister of Agriculture.

Alex. Marling, Esq.,
Secretary Education Department,
Toronto, Ontario.

Canada.

On the application of George William Ross, Minister of Education for Ontario, of the City of Toronto, Province of Ontario, in virtue of "The Copyright Act of 1875," and the requirements of the said Act having been complied with the copyright of the book called "The High School Music Reader," by John W. Tufts, and H. E. Holt, adopted for use in Canadian schools, by S. H. Preston, is hereby registered in this folio 2,556, of Register of Copyrights, No. 12, kept in this office of the Minister of Agriculture to secure to the proprietor of the said book, George William Ross, Minister of Education for Ontario, all the privileges granted by the said Act.

JOHN LOWE,
Acting Deputy-Minister of Agriculture.

Office of The Minister of Agriculture,
Ottawa, this 20th day of March, A.D. 1885.

Education Department,
Toronto, 26th March, 1885.

Gentlemen,—Your sample of the Public School Music Reader, by J. W. Tufts and H. E. Holt, adopted for use in Canadian schools by S. H. Preston, submitted to this Department has been examined, and your attention called to the following defects:—

1. *Quality of Paper.*

The stock and finish of the paper is good, but not *heavy* enough. It must be equal to that in the *American* edition of this book.

2. *Typography.*

The plate on page IV. is very rough and should be improved. The presswork is fair, and will probably be improved when better paper is used.

3. *Binding.*

Not in accordance with Regulations as regards stitching, mull and tapes, though the binding in sample is strong. A copy of the Regulations is sent herewith. The paper on cover is of rather a light colour and will soil easily. Samples of paper for improvement in this respect should be submitted to the Assistant Queen's Printer and the Department. Strawboard must be equal to No. 25 to the bundle. (American.)

4. *General Criticisms and Instructions.*

(1) First sentence page V. is faulty.

(2) The insertion of pages on "Preliminary Training," has disarranged the paging, page 5 now following page XVI. This must be corrected.

(3) In changing the songs on pages 72 and 79 care has not been taken to change the *illustrations*. It will be necessary to do so as the illustrations agree with the songs on the respective pages with the exception of those pointed out.

(4) Price to be inserted on title page or on cover.

(5) Advertisements not to appear in book or on cover, but some ornamentation on back of book in lieu of the advertisements now on cover.

Your obedient servant, etc.,

ALEX. MARLING,
Secretary.

The Canada Publishing Co.,
Toronto.

Report on sample of The Public School Music Reader by Tuft & Holt, adapted for Canadian Schools by S. H. Preston.

Paper.

Not sufficiently good for a music book, should be equal to that in the American edition.

Typography.

Fair, will be better on better paper. The plate on page IV. is very rough and should be improved.

Binding.

Not in accordance with Regulations of 1881 as regards stitching, tapes and mull, though the binding as done in sample is strong.

Paper on cover rather light colour.

General Criticisms and Suggestions.

We are not supposed to be responsible for pointing out the defects in books submitted except as to mechanical execution, but have observed the following which would be adversely criticised.

1. Faulty construction of first sentence, page V.

2. In adopting the American plates for this book, though a number of pages have been inserted as new matter on "Preliminary Training," no care has been taken to remember the pages, but page 5 now follows page XVI.

3. On page 72 in changing the song from "Buttercups and Daisies" to "Suppose a little Cowslip" the illustration Buttercups and Daisies has not been changed although the cowslip belongs to a different family altogether. It cannot be said that it is a small matter, because except when a change has been made for the Canadian work, the illustrations are on the songs accompanying them respectively.

4. On page 79, another adaptation here. The illustration "Humming Birds" is left standing while "Swing Cradle Swing" is inserted, another opening for criticism.

5. Price should be inserted on title page or on cover.

6. Advertisements not to appear in book or on cover, some ornamentation instead, or a song on back of book.

G. E. THOMAS,
Assistant Queen's Printer.

H. M. WILKINSON,
Assistant Accountant,
Education Department.

DEPARTMENT OF AGRICULTURE,
Copyright and Trade Mark Branch,
OTTAWA, Canada, 18th March, 1885.

SIR,—I beg to forward you the herewith enclosed Certificate of Registration of the copyright of the book called "Scripture Readings for High and Public Schools, No. 2,553."

I have etc.,

JOHN LOWE, *per* J. B. J.,
Acting Deputy-Minister of Agriculture.

ALEX. MARLING, ESQ., Secretary,
Education Department,
Toronto, Ontario.

CANADA.

On the application of George William Ross, Minister of Education for the Province of Ontario, in virtue of "The Copyright Act of 1875," and the requirements of the said Act having been complied with, the copyright of the book called "Scripture Readings for High and Public Schools" is hereby registered in this Folio 2,553 of Register of Copyrights, No. 12, kept in this office of the Minister of Agriculture, to secure to the proprietor of the said book, George William Ross, Minister of Education for the Province of Ontario, all the privileges granted by the said Act.

JOHN LOWE,
Acting Deputy of the Minister of Agriculture.

Office of THE MINISTER OF AGRICULTURE,
Ottawa, this 18th day of March, A.D., 1885.

Certified to be a true copy of the Registration of the said book "Scripture Readings for High and Public Schools," in the Register of Copyrights, No. 12.

JOHN LOWE,
Acting Deputy of the Minister of Agriculture.

Office of THE MINISTER OF AGRICULTURE,
Ottawa, this 18th day of March, A.D., 1885.

EDUCATION DEPARTMENT,
TORONTO, 8th May, 1885.

GENTLEMEN,—The specimen copies of Jeffers' History of Canada Primer, submitted in connection with the Indenture about being entered into, have been examined, and apart from the improved workmanship required as specified in the Indenture, your attention is called to the following defects, which must be corrected in the next edition.

Revision required as to spelling, see "Tadoussac," "Longueil," "Seignorial," etc.

Revision as to clearness of construction of some sentences, see sec. 12, p. 56, sec. 8, p. 76, sec. 4, p. 111.

Improvement as to typography, broken letters, letters dropped, w. f., etc., on pp. 19, 23, 24, 29, 38, 63, 66, 79, 103, 117, 119.

It has been stated that there are a few historical errors. This might be looked into by submitting the work to a critic before another edition is printed.

Your obedient servant,

ALEX. MARLING.

THE CANADA PUBLISHING CO.,
Toronto.

DEPARTMENT OF AGRICULTURE,
OTTAWA, Canada, 6th July, 1885.

GENTLEMEN,—I beg to inform you that your copyright of the book called "History of Canada," by J. Frith Jeffers, M.A. has been registered this day in folio 2,742 of Register of Copyrights, No. 13.

I have the honour to be,
Sir,
Your obedient servant,

JOHN LOWE, *per* J. B. J.,
Acting Deputy of the Minister of Agriculture.

To THE CANADA PUBLISHING CO.,
26, Front Street, West,
Toronto.

THIS INDENTURE made in duplicate this thirteenth day of July, in the year of our Lord one thousand eight hundred and eighty-five,

Between The Canada Publishing Company, (Limited), of the first part,

and

Her Majesty the Queen, represented herein by the Honourable the Minister of Education for the Province of Ontario, acting for the Education Department of Ontario, of the second part.

Whereas the said parties of the first part have by a certain Indenture made upon the thirteenth day of July, in the year of our Lord one thousand eight hundred and eighty-five, acquired from the said party of the second part the right to publish the "History of Canada," by J. Frith Jeffers, under conditions and restrictions fully set out in the said Indenture.

And whereas the parties hereto have agreed to execute this indenture so that the copyright in the said "History of Canada" may be properly vested in the said party of the second part.

Now therefore this Indenture witnesseth, that the parties of the first part, in consideration of the premises and in further consideration of the sum of one dollar of lawful money of Canada to said parties of the first part paid by the said party of the second part, the receipt whereof is hereby acknowledged, have conveyed, assigned and transferred, and by these do convey, assign and transfer unto the said party of the second part, her successors and assigns, all and any right, title or interest, property, claim or demand or right of proprietorship which they may possess or in any way be entitled to, of, in or to the copyright of the said "History of Canada," which said copyright was upon the 6th day of July, 1885, duly registered in folio 2,742 of Register of copyrights, No. 13, in the Department of Agriculture (Copyright and Trade Mark Branch), at the City of Ottawa.

To have and to hold the same to the said party of the second part, her successors or assigns, with full power and authority to her over the copyright in the said "History of Canada."

And to have the sole right and liberty of printing, reprinting, publishing and vending the same, reserving however to the said parties of the first part the rights over the said "History of Canada," provided for and contained in the said Indenture of the thirteenth day of July, one thousand eight hundred and eight-five.

In witness whereof the parties herto have hereunto set their hands and seals the day and year first above written.

Signed, sealed and delivered in the presence of } For the Canada Publishing Company, (Limited).

SEYMOUR PORTER. } ARTHUR B. LEE, President.

Know all men by these presents:

That the Canada Publishing Co. (Limited), hereinafter called the publishers, and Arthur B. Lee, of the City of Toronto, in the County of York, merchant, and John Leys of the same place, merchant, hereinafter called "Sureties," are jointly and severally firmly bound unto Her Majesty the Queen in the sums following, namely, the said publishers in the sum of five thousand dollars, and the said Arthur B. Lee and John Leys each in the sum of two thousand five hundred dollars, to be paid to Her Majesty the Queen and her successors, for which payment to be well and truly made we severally bind ourselves, our executors and administrators by these presents, sealed with our seals and dated this thirteenth day of July in the year of our Lord one thousand eight hundred and eighty-five.

Whereas the publishers have obtained from the Minister of Education representing the Education Department of the Province of Ontario, the right to print and publish "The History of Canada," by J. Frith Jeffers, authorized by the said Education Department, for use in the Public Schools of the Province of Ontario, under and subject to the terms and conditions of the annexed Indenture of agreement dated the thirteenth day of July, one thousand eight hundred and eighty-five.

Now the condition of the above obligation is such that if the said publishers, their successors and assigns, do and shall observe, perform and fulfil the terms and conditions of the said Indenture of Agreement, and the Regulations of the Education Department respecting text books for use in the Public Schools as the same now are or may from time to time be in force, and if the several copies of the said books so printed shall in paper, printing, binding and other qualities conform to the said Indenture of Agreement, and if the said books so printed shall be sold by the said publishers so that the retail price of each copy thereof for use in the Public Schools shall not exceed the maximum sum fixed by the said Indenture of Agreement, and if the said publishers do and

shall observe, perform and fulfil as to each copy of the said book each and every of the terms and conditions of the said Indenture of Agreement, then these presents shall be void, otherwise to remain in full force.

Signed, sealed and delivered in the presence of

SEYMOUR PORTER.

For the Canada Publishing Company (Limited),

ARTHUR B. LEE, [L.S.]
President.

ARTHUR B. LEE, [L.S.]

JOHN LEYS. [L.S.]

MONTREAL, March 9th, 1885.

HON. G. W. ROSS,
Minister of Education.

DEAR SIR, —A representative of our house had the honour to wait upon you a few days ago, and you kindly informed him that Tennyson's "In Memoriam" would probably be put upon the list of approved school books.

Our object in writing you to-day is that we have taken the liberty of sending you by post a copy of our edition of "In Memoriam." As you will see it is got up in a style suitable for holiday sales. We would however prepare an edition at half the price or less on thinner paper suited for class use, if you finally decide upon the book.

We would esteem it as a favour if you would give us as early intimation as possible of your decision so that we could make an edition suited to the purpose.

Yours, etc.,

DAWSON BROS.

EDUCATION DEPARTMENT,
TORONTO, March 11th, 1885.

DEAR SIR,—Your representative must have misunderstood me for I had no idea of placing Tennyson's "In Memoriam" on our list of approved text books. I do expect to recommend a course of private reading for the teachers of the province, but should I recommend any portion of Tennyson's work, of which you have the copyright, I could only do so on the condition that a cheap edition, specially prepared for the teachers, was published.

Yours, etc.,

GEO. W. ROSS.

MESSRS. DAWSON BROS.,
Publishers, Montreal, P.Q.

EDUCATION DEPARTMENT,
TORONTO, August 13th, 1885.

DEAR SIRS,—I wrote you some time ago in regard to your copyright of Tennyson's "In Memoriam." I am disposed to prescribe this poem as part of the Reading Course for the teachers of the Province of Ontario, numbering some 7,000. The regulations will not make it obligatory upon them to purchase the book, but will be of such a nature as will in all probability secure a market for 4,000 copies immediately, and perhaps for a few years an edition of one or two thousand more. The copy sent me is too expensive for my purpose. What I would like to get is a small, cheap edition, say two prices, in paper

cover at fifteen cents, and bound at twenty-five cents. Would you let me know if you could issue such editions, and how soon they might be ready? On hearing from you I shall then determine what course to take.

Yours, etc.,

GEO. W. ROSS.

Messrs. Dawson Bros.,
Publishers, Montreal.

Form of Specifications upon which Tenders were asked from Publishers for "Manual of Hygiene."

Hon. G. W. Ross, Minister of Education, asks for tenders for printing, binding and publishing 2,000 copies of book on "Hygiene," small pica type, 27 x 41, 304 pages, crown 8vo, paper to be No. 1, toned, calendered, and to measure 32 x 42 inches, quad crown, to weigh seventy-five pounds to the ream of 500 sheets, and to be Canadian manufacture. Full bound in extra cloth, dark green in colour; cover to be embossed on front and back; 75 to 100 illustrations in book. To be sewn in sections of sixteen pages each, with thread, not with wire. End papers to be attached to book separate from sections. Cuts for illustrations to be furnished by Department of Education. Copyright to be the property of the Department. Estimate to include the cost of electrotyping. Plates to be sent to the office of the Queen's Printer as soon as edition is published. All work to be done in the best style, and to the satisfaction of the Minister of Education. Book to be authorized by the Department to be used in the Normal and Model Schools throughout Ontario. Retail price of book to be $1. Usual trade discount of twenty-five per cent. to be allowed, and an extra ten per cent. to jobbers.

State terms for exclusive right to publish for two years from date of publication. Sealed tenders addressed to Hon. the Minister of Education, care of G. E. Thomas, Assistant Queen's Printer, Parliament Buildings, Toronto, not later than 1st June, 1885.

Make offer in cash or note, exclusive of electros, for right to publish for two years, or until the edition is sold. Copyright to be the property of the Ontario Government.

May, 1885.

The following publishers were asked to tender :—

W. J. Gage & Co.; Copp, Clark & Co.; Canada Publishing Co.; Warwick & Sons; G. M. Rose & Co.; Methodist Publishing Co.

Toronto, June 1st, 1885.

Hon. G. W. Ross,
Minister of Education,
Toronto.

Sir,—We have your favour of May 28th, requesting tender for the exclusive right to publish 2,000 copies of a "Work on Hygiene," to be authorized for use in Normal and Model Schools. We beg to make the following offer :—

We will publish and offer for sale the work manufactured according to enclosed specification, if given the exclusive right to publish until the quantity of 2,000 is sold by us, and will deliver to your order the electrotype plates as soon as edition is printed.

We agree to make the book and sell at fifty cents each nett wholesale, and allow off retail price to be fixed by you. Twenty-five per cent. off in quantities of less than 100 copies, over which amount, purchased at one time, an extra ten per cent. will be given; between such nett twenty-five per cent. and ten per cent. price and our nett price of fifty cents we agree to pay you in cash for the right of publishing. Waiting reply to above.

We remain yours, etc.,

WM. WARWICK & SON,
per A. F. Rutter.

TORONTO, 1st June, 1885.

HON. GEO. W. ROSS,
Minister of Education, Ontario.

SIR,—We will undertake to print and publish an edition of 2,000 copies of book on "Hygiene" of 304 pages, crown 8vo., in style as described in specification, and sell the said books to the public for ninety cents, allowing the trade discounts of twenty-five and ten per cent. The Department of Education to supply us with the literary portion, and the wood-cuts, or electros of the same, that may be required for the said books. For which (provided a second edition of this book is not issued before our edition is sold out) we will give a set of stero. plates and $100 in money.

ROSE PUBLISHING CO.
G. M. ROSE, President.

EDUCATION DEPARTMENT,
TORONTO, 19th June, 1885.

DEAR SIR,—I enclose herewith as desired, a copy of the estimate of the Methodist Publishing Company respecting the work on Hygiene.

Yours, etc.,
ALEX. MARLING.

GEO. E. THOMAS, Esq.
Assistant Queen's Printer, Toronto.

METHODIST BOOK AND PUBLISHING HOUSE.
TORONTO.

HON. G. W. ROSS,
Minister of Education, City.

DEAR SIR,—Our estimate for composition, press-work, binding and publishing (including a set of electrotype plates) 2,000 copies of a book on "Hygiene," to be set in small pica type (size of page 27 x 42 ems), 304 pages, crown octavo, paper to be No. 1 quality, toned and calendered, and to weigh seventy-five pounds to a ream of 500 sheets 32 x 42, binding to be extra cloth, dark green or any shade of colour preferred, is $800. The cuts for illustration to be furnished gratis by the department. All work to be done to the satisfaction of the Minister of Education, and the plates to be sent to the office of the Queen's Printer as soon as the edition is published. We also agree to pay to the Minister of Education the sum of $400 exclusive of cost of plates for the privilege of publishing said book for two years or until edition is sold. We also agree to sell said book at the proposed price, viz., $1 per copy retail, and to allow the trade twenty-five per cent., and an extra ten per cent. to jobbers. This offer is made on the condition that the said book is authorized by the Department of Education for use in the Normal and Model Schools throughout Ontario.

I am, etc.,
WILLIAM BRIGGS.
per H. G. WATSON.

METHODIST BOOK AND PUBLISHING HOUSE,
TORONTO.

HON. G. W. ROSS,
Minister of Education, City.

DEAR SIR,—Our estimate for composition, press-work, binding and publishing (including a set of electrotype plates), 2,000 copies of a book on "Hygiene," to be set in

small pica type (size of page 27 x 42 ems) 304 pages, crown octavo, paper to be No. 1 quality, toned and calendered and to weigh seventy-five pounds to a ream of 500 sheets 32 x 42, binding to be extra cloth, dark green or any shade of colour preferred is $800. The cuts for illustration to be furnished gratis by the department. All work to be done to the satisfaction of the Minister of Education, and the plates to be sent to the office of the Queen's Printer as soon as the edition is published. We also agree to pay the Minister of Education the sum of $500 exclusive of cost of plates for the privilege of publishing said book for two years or until edition is sold. We also agree to sell said book at the proposed price, viz., $1 per copy retail, and to allow the trade twenty-five per cent., and an extra ten per cent. to jobbers. This offer is made on the condition that the said book is authorized by the Department of Education for use in the Normal and Model Schools throughout Ontario.

Yours, etc.,

WILLIAM BRIGGS.

Toronto, August 11th, 1885.

Hon. G. W. Ross,
Minister of Education, City.

Dear Sir,—We have revised our estimate for work on "Hygiene," which we hope will be satisfactory. We have also changed the sum of $400, as in the old estimate, which we agree to pay, to $500. We hope this will also be acceptable.

Yours, etc.,

WILLIAM BRIGGS.

Toronto, August 11th, 1885.

G. A. Thomas, Esq,
Queen's Printer Dept., Toronto.

Dear Sir,—We have, as you will see by our letter to Mr. Ross (and which we enclose to you for presenting to him) revised our estimate for the work on "Hygiene." and also quote a re-considered figure, which we agree to pay, viz., $500 instead of $400. Hoping the above will be acceptable to Mr. Ross and yourself.

Yours, etc.,

WILLIAM BRIGGS.

Cost of Electros for Manual on Hygiene.

Drawn and electroed by Grip Company	$140 65
Electros purchased in New York	140 00
Lithographing two coloured plates	75 00
Total	$355 65

Education Department,
Toronto, 11th March, 1885.

Gentlemen,—We are using in the Normal and Model Schools of Ontario "Hopkins' Outline study of man" published by your firm. The Rev. Mr. Briggs of the Methodist Book and publishing House suggested the publication of a Canadian edition, but intimated to me that you could neither supply the books or sheets for binding so as to sell for less

than $1.25 per volume. I expect that from two to three thousand copies can be sold in this province each year, and am desirous to supply it to the teachers at a reasonable price. Could you make such arrangement with Mr. Briggs as would enable him to sell the book for $1 nett? This is the outside figure I would like the teachers to pay, and as I propose to enlarge the constituency for the sale of this book, I would like to know what you could do before I put it upon our authorized list. An early answer will oblige.

Yours, etc.,

GEO. W. ROSS.

Messrs. Charles Scribners' Sons,
Publishers, New York, U.S.A.

New York, March 14th, 1885.

Dear Sir,—Your esteemed favour of the 11th instant is received, and we beg to say that we have made a new estimate upon the Canadian edition of Hopkin's "Outline Study of Man," and we have modified our price to meet the point you desire to secure, and the Rev. Mr. Briggs will now be enabled to furnish it to the teachers at not over $1.00. We have repeatedly urged its being treated as a "net book," and if that feature is adopted his way will be still clearer.

We beg to add that our calculations have all along been based upon an edition of 3,500 copies, and we trust your own views will be that that number can be safely taken, if not absolutely within the year, then within a reasonable time thereafter.

However, we chiefly wished to report that we had abated our price to accomplish the aim you had in view. Thanking you for your kindness and consideration in the matter, we are,

Yours respectfully,

CHAS. SCRIBNER'S SONS

Geo. W. Ross,
Minister of Education,
Toronto.

Education Department,
Toronto, March 17th, 1885.

Sirs,—I saw Mr. Briggs this morning before the receipt of your letter in regard to "Hopkin's Outline Study of Man." He says that, in your communication to him, the price at which you propose to sell him the sheets is so high that he could not possibly place the book upon the market at one dollar. By your favour of the 14th instant, I would understand that a more favourable arrangement has been made with him than would appear from his representations to me. If it should turn out that your price is so high that Mr. Briggs cannot dispose of the books to the teachers at one dollar, I must consider the propriety of securing some other book to take the place of Hopkins. I would regret this very much as the book is deservedly popular.

Yours, etc.,

GEO. W. ROSS.

Messrs. Charles Scribner's Sons,
New York, U.S.A.

New York, March 20th, 1885.

Dear Sir,—The figures that we have named to Rev. Mr. Briggs are such that he will possibly be able to let the teachers have the Hopkin's "Outlines" at one dollar net.

We have written him again to-day, and we think he will say as much to you. If we should be mistaken in this we will write you again, making an offer of our own to meet the point fully.

Yours truly,

CHARLES SCRIBNER'S SONS.

GEO. W. ROSS, ESQ.,
Minister of Education,
Toronto.

EDUCATION DEPARTMENT,
TORONTO, May 6th, 1885.

MY DEAR BUCHAN,—Would you be too busy to look over a geography which is being prepared by Campbell for the approval of the Department? I do not wish you to spend more than an hour or so in examining the book and pointing out such defects as may occur to you. If you think you can do it I will send the book down.

Yours, etc.,

GEO. W. ROSS.

J. M. BUCHAN, ESQ., M.A.,
Principal Upper Canada College,
Toronto.

MEMORANDUM *re* W. C. CAMPBELL'S NEW ILLUSTRATED GEOGRAPHY AND ATLAS.

The general plan is at least so good that, if it were well carried out, the book would be much superior to anything of the kind ever previously offered for sale at the same price.

The colouring of the maps is good, and the drawing appears to be generally fairly correct; but I think it would be well to alter the part of the commercial map of Canada, which includes the territory formerly in dispute between Ontario and Manitoba. There ought also to be in the book larger and fuller maps of the country between Lake Superior and the Pacific, and of the portion of the United States bordering on Ontario. If necessary, map twenty-four might be omitted to make room for them.

I have not been able to give much time to detailed examination of the work, but the little which I have devoted to this purpose has shown me that there are very numerous inaccuracies. The spelling on the maps is often wrong, often various, and often different from that in the letter-press. For instance: "La'Cross" is certainly not the correct form of the name of a lake on the Upper Churchill. "Qu'Appelle" is spelt in three different ways on two maps. "Abbitibee" and "Stekin" of the letter-press appear on the map as "Abbitibi" and "Stoctime." The arrangement in one place is confusing, page 22 having apparently no business to come between 21 and 23. The Mosquito Coast should not be coloured differently from Nicaragua, to which it belongs. Some of the statements seem to require revision, as for example:—

(1) That the Lapps seldom exceed four and a half feet in height (p. 66).

(2) That the Moricoes are Celts (p. 75).

(3) That the characteristic product of the country between Toronto and Lake Simcoe is spruce; that of the district between Hamilton and Lake Huron, oats (see physical map of North America); and that of the vicinity of Haliburton, orchard fruits (see physical map of Canada).

As I have found the errors I have instanced, and a great many more, in a very brief examination, I am morally certain that the book is full of mistakes which can be corrected; and I would accordingly suggest that authorization be delayed with the view of affording an opportunity for their correction, and for the addition of the maps which I have proposed.

J. M. BUCHAN.

U. C. COLLEGE,
16th May, 1885.

MONTREAL, February 19th 1885.

The Honourable
THE MINISTER OF EDUCATION,
Ontario.

SIR,—My attention has been called anew to reports in the press of Ontario, to the effect that you had, or were about to, withdraw authorization from the geographies at present used in the schools of the Province, and to replace them with new text-books.

I feel certain that these reports are untrustworthy, as I have your personal assurance, kindly given me when I had the honour of an interview with you last summer, that no change would take place in the use of my geographies without advising me, or giving me the opportunity to make any alteration in the plan of the books in harmony with your views.

Reposing confidence in that assurance, I feel that I have no excuse for now troubling you ; it may be, however, that your views in regard to the geographies have, in the interval, undergone change. Distant as I am from Toronto, it is not easy for me, at my advanced age, to enquire this of you by word of mouth, or to be on the spot to take any suggestions, looking to the (perhaps) necessary revision and modernizing of my books, which you might kindly give me the benefit of.

I therefore trouble you with this note, and shall be glad of such reply as you may think proper and kind to send me. The modest interest I still possess in the two geographies, and which I desire to leave behind me for the benefit of my family, prompts my concern for the little property I have in them, and my anxiety to hear that it is in no way in peril.

Yours, etc.,

JOHN LOVELL.

EDUCATION DEPARTMENT,
TORONTO, February 26th, 1885.

MY DEAR SIR,—In reply to yours of the 19th instant, I beg to state that no change will be made in the geographies now authorized in Ontario, until full notice is given to the public. If you wish to adapt your books to the advanced methods of teaching geography, you will have ample opportunity. I hope to announce my intention in this matter before very long.

Yours, etc.,

GEO. W. ROSS.

JOHN LOVELL, ESQ.,
Publisher, etc.,
Montreal, P.Q.

LONDON, May 31st, 1885.

HON. G. W. ROSS,
Toronto, Ont.

HON. SIR,—I send you, per this mail, one copy of Lawson's Geography of the British Empire, which is said to be a good school book, but this edition cannot be sold in England on account of author having sold copyright to two firms. Messrs. W. Collins & Son ask me to draw your attention to same. The book retails for fifty cents per copy, thirty per cent. to the trade. After the present edition was sold the book would be published in Canada and sold at same price. There is no book now on the list similar.

Yours, etc.,

W. BRYCE.

TORONTO, June 23rd, 1885.

DEAR SIR, —Your note respecting proposed mode of binding your advanced Geography duly received. Would you be good enough to send me a sample, so that I might compare the quality and price with the copy now authorized.

Yours truly,

G. W. ROSS.
Minister of Education.

JOHN LOVELL, ESQ.,
Publisher, etc.,
Montreal.

MONTREAL, March 19th, 1885.

To the Honourable,
THE MINISTER OF EDUCATION,
Toronto.

SIR,—I have the honour to acknowledge your favour of the 14th instant, received to-day, and in compliance with your request forward by this mail copies of "Lovell's Advanced Geography," and "Lovell's Intermediate Geography," from the last editions printed.

The books will, I trust, be found to be in paper, printing and binding equal, if not superior, to the sample copies on file in your Department.

The geographies, I regret to say, are the only ones of my school books authorized by the department to be used as text-books in Ontario.

Yours, etc.,

JOHN LOVELL.

MONTREAL, March 19th, 1885.

ALEX. MARLING, ESQ.,
Secretary Education Department,
Toronto.

SIR,—In answer to your favour of the 14th, we send you by this mail copies of "Lovell's Advanced Geography," and "Lovell's Intermediate Geography," from the last edition printed, as requested, being the only two books of our series authorized to be used as text books in Ontario.

Yours, etc.,

JOHN LOVELL & CO.

EDUCATION DEPARTMENT,
TORONTO, 9th June, 1885.

MY DEAR SIR,—I have looked through "Lawson's Geography of the British Empire," and find it unsuitable for our Ontario Schools. Out of 188 pages only eleven are devoted to the Geography of Canada. Besides the details in regard to England, Ireland and Scotland are far more voluminous than are required for our Canadian schools. If you have a good text book on this subject, I would like to give it consideration.

Yours, etc.,

GEO. W. ROSS.

WM. BRYCE, ESQ.,
Bookseller,
London, Ont.

MONTREAL, 20th July, 1885.

The Hon. G. W. Ross,
Minister of Education,
Toronto.

DEAR SIR,—I am compelled to reduce the price of my Advanced Geography from $1.50 to $1. To enable me to do so, without serious loss, will you kindly permit me to make the binding with cloth back and paper sides. The book as to printing and paper to remain same as it is at present. I shall make the binding to look well and be substantial.

Yours obediently,
JOHN LOVELL.

MONTREAL, 25th July, 1885.

The Hon. G. W. Ross,
Minister of Education,
Toronto.

DEAR SIR,—In reply to yours of the 23rd, I forward by this mail a copy of my Advanced Geography, bound with paper sides and cloth back. Should you kindly approve of the binding, and of reducing the price of the book from $1.50 to $1. I shall have a neat design prefaced, to be printed on the outside cover. Or, should you see fit to cause a design to be drawn, I will gladly meet the expense of the design and of the engraving.

Yours truly,
JOHN LOVELL.

[Since writing, a thought struck me that I had a plate engraved for the cover of the Geography when it was first published. On looking through my safe this afternoon, I found both the wood cut and two electrotype plates. I enclose a rough proof, taken by myself with a dirty roller, my hands being absent keeping the civic holiday. I trust the design will have your approval.]

MONTREAL, 6th August, 1885.

Honourable G. W. Ross,
Minister of Education,
Toronto.

DEAR SIR,—I send by this mail a copy of my Advanced Geography, bound in paper sides. If you suggest any improvement in the text, maps, or engravings, I shall, with pleasure, attend to your request.

Yours obediently,
JOHN LOVELL.

EDUCATION DEPARTMENT,
TORONTO, 31st October, 1885.

MY DEAR SIR,—As I promised you an answer in regard to your Geography before Monday, I would like simply to state that before a work so large as your book, and dealing with so many details could be authorized, it would be necessary for the department to submit it to the most rigid scrutiny in order fully to test its accuracy. You must not expect then any decision for some time. I say this altogether apart from the question as to whether any additional book should be added to the list of Geographies at present authorized.

Yours, etc.,
GEO. W. ROSS.

W. C. CAMPBELL, ESQ.,
Publisher,
Toronto.

EDUCATION DEPARTMENT,
TORONTO, 16th March, 1885.

MY DEAR SIR,—Appleton & Company, of New York, are publishing the "Art of School Management," by Baldwin. This book is used in our Model and Normal Schools, and the sale cannot be less than 1,000 or 1,500 per annum. It contains a good deal of extraneous matter, and I am strongly inclined to place it in some suitable hands for the purpose of reducing it in size, and perhaps adopting it somewhat to our Canadian Schools. Do you think you could publish a Canadian edition, or would it be better to correspond with Appletons and see what arrangements could be made for the use of his plates, as far as they could serve our purpose?

Yours, etc.,

GEO. W. ROSS.

Rev. WM. BRIGGS,
Toronto.

TORONTO, 18th March, 1885.

Hon. G. W. Ross,
Minister of Education,
City.

DEAR SIR,—Your note of yesterday to hand, and in reply beg to say that we will willingly undertake to make such a book, as stated in your note, viz., "Baldwin's Art of School Management."

Seeing that you wisely purpose to adapt the book for Canada—thereby taking out old, and introducing new matter—it would be better to set up the whole of the book here, and make new plates, otherwise Appleton's old plates, and the new plates of the new matter would not match. The book would look "patched."

To approach Appleton & Co. for permission to publish here, or for use of his plates, would bring from them a charge beyond the value of such permission, and thereby hinder what you wish it to be, a good book and yet cheap.

If you have it re-written, and adapted to Canada, it would virtually make it a new book, and would be so recognized by the authorities at Ottawa, and would enable us to copyright it.

I am at your service to call on you any time you drop me a note.

Yours, etc.,

WM. BRIGGS.

BRANTFORD, 14th April, 1885.

Honourable G. W. Ross,
Minister of Education.

DEAR SIR,—Many mathematical teachers in Ontario think that a new text book on Algebra, specially suitable for preparing candidates for second class certificates, is needed. Another mathematical master and myself have been thinking of endeavouring to supply the want, but we find that the publishers are afraid to take hold of such a work, fearing that you might ask some one else to write a work and authorize it to the exclusion of any other. Now my object in writing is to ask whether you would give a favourable consideration to such a work should we decide to publish it at our own cost and risk, or whether any Departmental influence would be used to prevent its introduction in the High Schools and Institutes should the work commend itself to the various mathematical masters throughout the Province.

Very truly yours,

I. J. BERCHARD.

EDUCATION DEPARTMENT,
TORONTO, 15th April, 1885.

MY DEAR SIR,—I cannot make any promise in advance in regard to any text book in course of preparation for Public or High Schools. I do expect before long to revise the list of authorized text books for use in our High Schools: to reject those that are considered unsuitable, and if possible to limit the number somewhat in each subject. Should your book be ready when this is being done, and should it be found better than the others, or should it be found better worthy of a place on the list of texts in Algebra, no doubt it would find a place. I could not agree to its introduction even temporarily into the schools, although there would be no objections to headmasters having it in their hands as a work of reference.

Yours, etc.,
GEO. W. ROSS.

I. J. BERCHARD, ESQ.,
Brantford.

TORONTO, 15th April, 1885.

HON. G. W. ROSS,
Minister of Education.

DEAR SIR,—We have the honour to submit samples of our Mercantile Graded Copy Books as at present issued, retailing for ten cents. The series is now in the editor's hands to make such improvements and modifications as the use has suggested, we claim that it is based on a more perfect system of grading than any other system in Canada, that it is more thoroughly studied out, and more consistent in its progressive details.

We propose to print this book on an engine-sized paper, practically as good as the tub-sized now used, to omit the blotting paper affixed, and to retail it for five cents, giving a discount of twenty-five per cent. to the retail, and an extra ten per cent. on lots of $500 nett to the jobber.

We respectfully ask your kind consideration of the series.

Your obedient servants,
COPP, CLARK & CO.

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59 MAITLAND STREET,
4th May, 1885.

DEAR SIR,—In answer to your request, I have prepared a statement of proposals for the preparation of two account books, to be used in the Fourth Book classes of our schools, which I enclose herewith.

Since my interview with you I have seen Mr. Clare, and have secured his co-operation in any work that may be undertaken on the books. It was after a conference with him that the enclosed scheme was made out, and it embodies his views as well as my own.

I am, dear sir,
Respectfully yours,
S. McALLISTER.

HON. G. W. ROSS, M.P.P.,
Minister of Education,
Toronto.

EDUCATION DEPARTMENT,
TORONTO, 7th May, 1885.

MY DEAR SIR,—The outline herewith returned is somewhat comprehensive, and in a general, way in a direction of which I think I could approve. Of course nothing would be

satisfactory but the printed or written book itself. If you like to draft a book in manuscript, say number one, according to the plan herein contained, and submit it to me, I will look through it, and perhaps get the opinion of some experts. You will please remember, however, that this proposition does not either directly or indirectly give you any claim for their authorization subsequently.

Yours, etc.,

GEO. W. ROSS.

SAMUEL MCALLISTER, ESQ.,
Toronto.

TORONTO, 18th May, 1885.

HON. G. W. ROSS,
Toronto.

DEAR SIR,—We have been pleased to hand you a copy of "The New Arithmetic," a work in the preparation and publication of which we have taken considerable pride. The first edition of 4,000 copies is already exhausted. When you can spare enough of your valuable time to sufficiently examine the work to offer an opinion upon it, we shall be pleased.

We are, etc.,

EATON, GIBSON & CO.

EDUCATION DEPARTMENT,
TORONTO, 20th May, 1885.

SIRS,—I have received a copy of your arithmetic, and propose looking through it very carefully. Of course, I do not intend to express any opinion about it, no matter how satisfactory it may be to me. You can well understand that it would not do for me to recommend any work except such as may be authorized by the Department. Your enterprise, however, at least deserves a word of praise.

Yours, etc.,

GEO. W. ROSS.

Messrs. EATON, GIBSON & CO.,
Toronto.

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250 PICCADILLY STREET,
LONDON, Ontario,
June 19th, 1885.

The Honourable
THE MINISTER OF EDUCATION,
Toronto.

SIR,—I desire most respectfully to consult you in regard to a number of text-cards which I am about to prepare, and which, when ready, I should like to submit for your inspection and approval, with a view of getting them authorized by your Department, and generally adopted by school boards and trustees throughout the Province, and eventually throughout the Dominion.

I propose, in the first instance, to bring out three series of Text Questions, as under:—

Series I., in Geography, for classes fourth, fifth and sixth.
Series II., in History, for classes fourth, fifth and sixth.
Series III., in Grammar and Composition, for classes fourth, fifth and sixth.

There will be three sets in each series, one for each class. Each set or packet will consist of fifty cards (about the size of the envelope in which this letter is enclosed), numbered consecutively from one to fifty. Each card will bear the name of the class for which it is intended, so that there need be no confusion, and will contain five questions, all carefully graded from first to last. It will thus be seen that no two cards in a set will be alike. Hence the questions will be at once sufficiently varied, interesting and searching. If published under the direct sanction of the Education Department, and with the approval of the Inspectors, these aids to teachers and pupils are likely, I trust, to become both useful and popular.

They are not intended to be used in a class till the ground covered by the questions has been thoroughly prepared. Teachers would do well to use these texts for several weeks immediately preceding the examination.

The questions are not by any means designed to supersede those set by teachers themselves, only to supplement them. For young teachers especially they will be of great service.

A long experience in public school work has long since convinced me of the necessity of something of this kind, and if the idea I have thus ventured to submit to your notice be deemed worthy of your sanction, I am willing at once to proceed with the work.

Should these sets be adopted, and found as useful as I anticipate they will, I have it in contemplation to prepare a further series in arithmetic.

I have already consulted two of our local school Inspectors on the subject—Messrs. Boyle and Dearness.

Awaiting the favour of your reply,

I have the honour to be, sir,
Your obedient servant,

C. TURNER, C.M.

EDUCATION DEPARTMENT,
TORONTO, 20th June, 1885.

DEAR SIR,—I cannot say whether your series of "test questions" as you call them, in Geography, History, and Grammar, will be useful or not. You can readily understand that until samples are submitted it would be impossible for me to judge. I cannot say, however, that I am favourably impressed with the idea, and without further enquiry cannot hold out any expectation of their being authorized. I speak thus frankly in case you might incur expense on the strength of any kindly reference that otherwise I might have made.

Yours etc.,

GEO. W. ROSS.

C. TURNER, ESQ., C.M.,
250, Piccadilly Street,
London.

THE COLLEGIATE INSTITUTE,
ST. CATHARINES, June 29th, 1885.

DEAR SIR,—Last Saturday, Mr. Berchard, of Brantford, and myself, signed an agreement with Rev. Wm. Briggs, of the Methodist Publishing Co., for the publication of an algebra adapted to the wants of pupils taking no work higher than II. class and pass matriculation. We propose to have the book through the press by the 1st January, 1886. We should be very glad of any suggestions that may occur to you which would tend to make the work more useful and valuable to teachers and students.

Yours truly,

W. J. ROBERTSON.

G. W. Ross, M.P.P.
Minister of Education.

EDUCATION DEPARTMENT,
TORONTO, 8th July, 1885.

MY DEAR SIR,—I fear that I am too much occupied with other work to give any suggestions in regard to your proposed text-book in Algebra. You should draw largely upon the experience of our most successful High School Teachers,

Yours etc.,

GEO. W. ROSS.

W. J. ROBERTSON, ESQ.,
Collegiate Institute,
St. Catharines.

LONDON, July, 30th, 1885.

DEAR SIR,—Has there been a new text-book of Physiology authorized for Public Schools. I wish to have Physiology more thoroughly taught in our schools. It has been neglected. If there is no new text-book, what book does the Department recommend. Please answer at earliest convenience, and oblige.

Yours etc.,

C. T. CAMPBELL.

HON. G. W. ROSS.

EDUCATION DEPARTMENT,
TORONTO, 31st July, 1885.

MY DEAR MR. CAMPBELL,—I understand a Committe of the Provincial Board of Health is editing a work on School Hygiene, which deals mainly with school sanitation, and such matters as particularly affect the health of Public and High School pupils. It is said the book will be ready in September. Please regard this information as entirely confidential.

Yours etc.,

GEO. W. ROSS.

COLIN T. CAMPBELL, ESQ., M.D.,
327, Queen's Avenue,
London.

EDUCATION DEPARTMENT,
TORONTO, 19th August, 1885.

MY DEAR SIR,—I observe that you publish a work by Hamblin Smith in Geometry, Arithmetic and Algebra. I am under the impression from something you told me that you pay a royalty on these books. The price at which they are sold is far beyond what the books could be produced for in Canada. Could you offer me any suggestions by which they could be placed upon the market at a lower figure? If there is no other solution for the matter I think I shall be forced to take some other publisher's edition, or get some Canadian publisher to produce books in the same subjects at a more reasonable price.

Yours etc.,

GEO. W. ROSS.

W. J. GAGE, ESQ.,
Publisher,
Toronto.

EDUCATION DEPARTMENT,
TORONTO, 26th August, 1885.

DEAR SIR,—I looked through the copy submitted of "Hodgson's Errors in English," and beg to say that in my opinion it is not at all equal to the American edition, nor could it in any way be expected to take its place, in fact, in order that your book might be useful to the pupil, he would be obliged to purchase the American edition as well. I, therefore, do not see my way clear to recommend it in any form, nor permit its use in our Public or High Schools.

Yours etc.,

GEO. W. ROSS.

THOMAS G. WILLIAMSON, ESQ.,
Bookseller,
Toronto.

EDUCATION DEPARTMENT,
TORONTO, 26th August, 1885.

DEAR SIR,—Reverting to our conversation of yesterday, I would say that the Geometry we require must contain books 1, 2, and 3. This will cover both the second and third class courses. For first class teachers the entire book will be required. I would be very much pleased to get an estimate from you of what you could sell a book for covering the second and third class courses, with the usual number of exercises.

Yours etc.,

GEO. W. ROSS.

W. J. GAGE, ESQ.,
Pubisher,
Toronto.

TORONTO, September 1st, 1885.

HON. G. W. ROSS,
Minister of Education,
Toronto.

DEAR SIR,—In reply to your favour of the 26th August, "*re* Hamblin Smith's Geometry," books 1, 2, and 3, we would say that we propose to bind up these books in one volume and offer to the schools at forty cents, keeping the books 1 and 2 for those who may desire to purchase, at thirty cents. We have, in addition to these, books 1, 2, 3 and 4 in one volume, the edition prescribed for the Maritime Provinces, which is sold at fifty cents.

We trust this will serve the purpose desired.

Yours etc.,

W. J. GAGE & CO.,

GRAFTON, October 6th, 1885.

HON. G. W. ROSS.

ESTEEMED FRIEND,—My son's wife has just returned from the Adriondack, State of New York, where she has been visiting her mother, the present Warden of Clinton Prison. She brought home two books entitled "Elementary Physiology and Hygiene," they seem well adapted to schools. She met with the books in her brother's family, and thought she would like her little boys to study them. She took the liberty to write to the author, and suggest that he send the works to thee, for which she not only received a note of thanks but a copy of the works.

Of course from what she had heard from me of our Minister of Education she felt confident she would be excused for the liberty taken.

I will only add that I had been thinking for some time of writing thee with reference to the subject of introducing into our schools such a work, with direct reference to the use of alcohol and its effects upon the human system, and therefore hope, unless thou hast something better adapted to the work to supply its place, this work may be introduced.

I have not seen any of the new readers yet. The idea of only allowing one kind was a sensible one, and fully expect the new ones will be an improvement upon the old series.

Respectfully,

THOS. CLARKE.

EDUCATION DEPARTMENT,
TORONTO, 9th October, 1885.

MY DEAR SIR,—Many thanks for your suggestion regarding the work on "Hygiene." I may say that the Board of Health is now editing a work which, if satisfactory, will be introduced into our public schools. It covers the ground, I think taken by the works to which you refer. It deals with the effects of alcohol upon the human system, and other matters in which I percieve you are much interested. I am glad you approve of the policy of having only one text book in reading. I hope when you have the opportunity of examining the new readers you will find them equal to your expectations.

Yours, etc.,

GEO. W. ROSS.

Mr. THOMAS CLARK, Grafton.

ST. CATHARINES, January 12th, 1886.

HON. G. W. ROSS.

DEAR SIR,—I have sent for your opinion—a rough draft of the preface—dealing with the importance of history as a study; the best method of teaching it, and samples of examination questions. They are submitted in the hope of being able to gain some light on what is required in this respect. Consequently the draft is not in a good condition for publication, and is not intended for that purpose. Another plan I thought of pursuing, that is, of putting headings to paragraphs, and numbering the different points taken up. Kindly return, unless you think it satisfactory, with a statement of what is deemed desirable.

Yours truly,

W. J. ROBERTSON.

BELLEVILLE, 15th January, 1886.

HON. G. W. ROSS,
Minister of Education.

SIR,—Should your Department contemplate the authorization of an advanced text-book in the subject of bookkeeping, I should like to submit for your examination "The Canadian Accountant," by S. G. Beatty and J. W. Johnson, now in the sixth edition, and "Johnson's Joint Stock Company Bookkeeping," now in the third edition.

Yours, etc.,

J. W. JOHNSON.

EDUCATIONAL DEPARTMENT,
TORONTO, 20th January, 1886.

MY DEAR SIR,—I have no intention of authorizing any work in bookkeeping at present.

Yours, etc.,

GEO. W. ROSS.

J. W. JOHNSON ESQ.,
Ontario Business College, Belleville.

EDUCATION DEPARTMENT.
TORONTO, 30th January, 1886.

SIRS,—I will refer the suggestion made in your favour of the 27th instant to omit the Ancient History from Miss Sheldon's book to the Committee in charge of authorized books for this province. I would not agree to have any reference of mine to any publication either in Canada or in the United States used for the purpose communicated in your letter. It is absolutely necessary for me to avoid all relations with publishers that might appear like an interest in their business affairs.

Yours, etc.,

G. W. ROSS.

D. C. HEATH & Co.,
Boston, Mass.

EDUCATION DEPARTMENT.
TORONTO, 8th October, 1885.

MY DEAR SIR,—You would oblige me very much by sending me at your convenience any publication of your admirably Educational Bureau bearing upon the subject of text books in elementary schools. I would like to know whether in any State of the Union a system of one text-book in each subject prevails, and if so, the result. I shall gladly reciprocate this favour in regard to any information in my possession.

Yours, etc.,

GEO. W. ROSS.

General JOHN EATON,
Supt. General of Education,
Washington, D.C.

EDUCATION DEPARTMENT,
TORONTO, 8th October, 1885.

MY DEAR DR. ALLISON.—During our conversation on text-tooks when I had the pleasure of seeing you in Toronto last summer, you stated that in Nova Scotia you either had but one text-book in each subject in your Public Schools, or that your policy was shaping in that direction. Will you be kind enough to let me know the facts of the case, and also if you have adopted the one text-book system; how far you believe it has been successful, and such reasons for that success as may occur to you? I expect to have some public dsscussion in regard to the text-book question, the issue being a uniform text-book *versus* a variety of text books in each subject.

Would you oblige me also by letting me know what system prevails in New Brunswick and Prince Edward Island? I am now reading with very great pleasure your address delivered at our Teachers' Association. It seems to my mind to be a complete vertical section of the educational stratifications of the last five centuries. I see that Canon Farrar's address at the John Hopkin's University gives expression to very much the same ideas.

With kind regards.

Yours., etc.,

GEO. W. ROSS.

DR. DAVID ALLISON,
Supt. of Education,
Halifax.

EDUCATION OFFICE,
HALIFAX, October 21st, 1885.

DEAR SIR,—In reply to your recent favour of enquiry, I have to say that the policy now pursued in this Province is that of prescribing a single text-book (or a single series of

text-books) in each subject, and insisting on their sole use in our public schools. This was beyond all question the policy intended by the framers of our present educational system in 1864. But some ten or twelve years ago, under the administration of my predecessor, the usage gradually developed itself of authorizing additional books (without removing the old ones) till at my accession to office in 1878 I found such facts confronting me as these: Eleven authorized Arithmetics, three sets of Readers, five Canadian Histories, and so on. I grappled with the difficulty as best as I could, and on its attention being called to the matter, the Legislature, with absolute unanimity, decreed that the one book system should prevail. The principle has been applied universally with the exception of classical texts, which as yet we only recommend. I should also say, to be strictly accurate, that we tolerate as yet, *pro tem.*, a second series of readers, which has got possession of one or two counties, and whose use is confined thereto. For the last few years of my predecessor's *regeme*, and the first few of my own, this Province was skinned by the book agents in a fearful manner. They operated on the teachers, and text books went in and out in swift succession. It were difficult to say how many thousand dollars were wasted annually on this wretched business. We have now put a stop to it. Inspectors are bound to see that our prescribed texts alone are used. We flatter ourselves that the central authority is a better judge of what the schools really need than the average teacher. Of course, in "boiling down" the inflated list, some little steam was generated, but it has long since evaporated, and the book agent is a thing of the past.

I most gratefully appreciate your kind references to my essay, I expect to write you a few lines to-morrow on University Federation.

Yours truly, etc.,

DAVID ALLISON.

WASHINGTON, D.C., October 15th, 1885.

DEAR SIR,—Your note of October 8th, as to text-books in the elementary schools of the United States, was duly received, and had immediate attention.

In a pamphlet which will accompany this letter (circular 2 of 1880) you may find, pp. 90-111, much of the information you desire. But as this has been published for some time, and as the changes in the State and Territorial school systems of our country have been made since its issue, the whole body of the school laws has been re-examined on the special point to which your inquiry is directed, and in the accompanying written sheet you will find the latest information as to the question of "one text-book on each subject" in our public schools.

From this statement it may be perceived that in Delaware, Florida, Minnesota, Nevada, Oregon, South Carolina and West Virginia substantial uniformity in text-books is secured by State arrangements; and that in Arizona, the District of Columbia, Washington, and Wyoming Territories, a like uniformity is reached through territorial arrangements.

Whether one text-book on each subject prevails in all cases of uniformity is not absolutely clear. In some cases there appear to be a choice between different books.

The result of the uniformity reached is not yet sufficiently indicated to warrant a declaration as to the beneficial effect of it; but the increasing number of States and Territories with this uniformity shows a drift in favour of the system. Minnesota, which was among the first, if not the first to adopt it, continues it, and thus indicates a satisfaction with it on the whole; and California, under a recent constitutional amendment in favour of it, is preparing to publish and use a uniform set of text-books throughout the State.

Yours, etc.,

JOHN EATON.

PROVISIONS AS TO TEXT-BOOKS IN THE FREE SCHOOLS OF THE UNITED STATES.

1. *Alabama.*—No provision in the latest School Law as to text-books in the public schools. Public School Laws of 1885.

2. *Arkansas.*—The State Superintendent prepares a list of text-books in Commno School studies, and recommends them to teachers and school officers. School Law of 1881, p. 13.

3. *California.*—County, City, and City and County Boards of Education at present adopt text-books for their schools; but a future State uniformity is to be secured. School Law of 1883.

4. *Colorado.*—Every School Board here has power to determine the text-books to be used in its schools, not to be changed in less than four years. School Law of 1883, p. 27.

5. *Connecticut.*—The State Board of Education may direct what book shall be used in all its schools, but does not appear to exercise this right. School Law, 1883, p. 6.

6. *Delaware.*—A state uniformity is here secured by a selection of text-books through a State Board of Education and a sale of them to school district clerks at cost. School Law 1881, pp. 5, 7.

7. *Florida.*—The State Superintendent of Public Instruction has substantially the choice of text-books for the State Schools, and may thus secure uniformity. School Law of 1881, p. 7, s. 12.

8. *Georgia.*—County Boards of Education here prescribe the text books for use in Common Schools of their several counties. Some City Boards have like power. School Laws of 1884, p. 12.

9. *Illinois* (except in the City of Chicago).—The directors of school districts determine the books to be used, and must secure uniformity in each district. School Laws of 1883, pp. 34, 56.

10. *Indiana.*—County Boards of Education here select the books for use in the several townships, towns and cities of their counties, except the city of Indianapolis. School Law of 1883, p. 42.

11. *Iowa.*—Boards of directors of district townships or of independent districts direct the text-books to be used in their several schools. Code of Iowa, 1873, p. 320.

12. *Kansas.*—Each District Board or Board of Education determines for itself the series of text-books to be used.

13. *Kentucky.*—The State Board of Education issues, from time to time, lists of text-books suitable for Common Schools, from which the trustees of districts adopt those for use in their several districts. Kentucky School Law, 1884, p. 12.

14. *Louisiana.*—A State Board of Education selects and recommends the text-books for the Public Schools. School Law 1877, p. 10.

15. *Maine.*—The superintending school Committees of towns (townships) select for their several schools a uniform series of text-books. School Law, 1883, p. 137.

16. *Maryland.*—Boards of County School Commissioners purchase the text-books for their several schools, a uniform series, thus securing county uniformity. School Law, 1877, p. 7.

17. *Massachusetts.*—The School Committee of each town or city directs what books and course shall be used in its Public Schools. Since 1884, they purchase and loan the books. School Law, 1883, chap. 44, s. 33.

18. *Michigan.*—Each District Board specifies the studies to be pursued in its schools and prescribes a uniform set of books for their use in them. School Law, 1881, p. 18.

19. *Minnesota.*—Uniformity of text-books is here secured by a State purchase of all for use in the State from one contractor, and sale of them at cost. School Law of 1881, p. 47.

20. *Mississippi.*—A county uniformity is here the rule, a convention of teachers meeting each county superintendent for a selection of text-books once in five years. School Law of 1880, p. 7.

21. *Missouri.*—The same is effected here by a meeting of the school officers in each county to select a uniform series of books for the county every five years. School Law, 1883, p. 27.

22. *Nebraska.*—The larger school districts entitled "High School Districts," prescribe each a course of study and text-books for the schools. School Laws, 1881, p. 43.

23. *Nevada.*—The State Board of Education here prescribes a uniform series of books for the principal studies in the Public Schools to continue four years without change. School Laws, 1885, p. 5.

24. *New Hampshire.*—The Town School Committees in this State have the matter of text-books for their schools in their special charge, those selected to hold, ordinarily, for three years or more, though, each year, one that has been in use five years may be changed. General Laws of New Hampshire, 1878, p. 217.

25. *New Jersey.*—Each County Superintendent in consultation with the school trustees of districts in his county, determines the course of study and the series of school books to be used in the county districts. School Laws of 1883, p. 14.

26. *New York.*—City and Village Boards of Education and the voters of country districts at an annual school meeting adopt and designate the books for five years use. Code of Public Institutions, 1879, p. 364.

27. *North Carolina.*—The State Board of Education recommends every three years a series of text-books for use in the State Schools. School Law of 1881.

28. *Ohio.*—City, Village, Special and Township Districts determine each for itself, at a regular meeting, the studies to be pursued and the text-books to be used. School Laws of 1880, s. 4020.

29. *Oregon.*—The text-books for use in this State are determined every four years by a consultation between the State Superintendent and the County Superintendents, and are uniform. School Laws, 1882, p. 4.

30. *Pennsylvania.*—The officers of each school district in a county or city, at a meeting with their teachers once in three years, determine the text-books for use in their several schools. School Law, 1882, p. 33.

31. *Rhode Island.*—In this State School Committees may, every three years, determine the text-books to be used in their respective towns. School Manual, 1882, p. 40.

32. *South Carolina.*—The State Superintendent of Education with the advice of a State Board of Examiners, is required to secure uniformity of text-books for the Public Schools. School Law, 1884, p. 4.

33. *Tennessee.*—A county uniformity of text-books is here provided for through suggestions of County Superintendents to the district directors of schools. School Law of 1873, pp. 5, 6.

34. *Texas.*—No specific provision on this matter in the latest school law. Much is left to the State Superintendent in consultation with the various school officers. School Law, 1884, pp. 6, 7, 11, 19, 22.

35. *Vermont.*—The books recommended by the text-book committees of the several towns in 1879 are to hold, with one on physiology and hygiene, since adopted, till November 1st, 1889. School Laws, 1882, p. 1.

36. *Virginia.*—An approach to State uniformity is here secured through a list of books authorized by the State Board of Education. Each County Superintendent with an advisory committee of three to five leading teachers, selects from this list the books deemed most suitable for the schools of the county. School Law of 1884, pp. 134, 135.

37. *West Virginia.*—A series of "class books" is presented and prescribed by the State for use in its free schools, and each County Superintendent is to enforce the use of these books alone. School Law of 1883, pp. 36, 37.

38. *Wisconsin.*—The District Boards in counties, the Boards of Education in cities, determines what books shall be used for three year terms. School Laws, 1885. pp. 62, 139.

39. *Alaska.*—Not yet sufficiently organized to have any clear school law.

40. *Arizona.*—The Territorial Board of Education prescribes a uniform series of text-books for use in the Public Schools, and enforces the use of it. School Law, 1883, pp. 6, 35.

41. *Dakota.*—The Boards of School Townships here may purchase text-books for their schools and sell or rent them to the pupils in their schools School Law, 1883, p. 19.

42. *District of Columbia.*—The Boards of Trustees of the Public Schools prescribes the course of study and the text-books for use in the Public Schools. School Laws of District of Columbia, p. 14.

43. *Idaho.*—Each school district selects its own text-books. School Laws, 1879, p. 10.

44. *Indian Territory; Cherokees, Choctaws, Creeks.*—The Cherokee Board of Education prescribes the course of study and text-books for use in its Public Schools. Information as to this matter in the other tribes is wanting. Laws of Cherokee Nation, chap. 10, p. 21.

45. *Montana*—Boards of School Trustees in the several school districts are required to enforce the course of study prescribed by the Territorial Superintendent. School Law, 1879, p. 21.

46. *New Mexico.*—District School Directors in their several districts adopt text-books for school use, unchangeable for five years. School Law, 1884, pp. 4, 12.

47. *Utah.*—District School Trustees determine here the branches to be taught, the Territorial and County Supintendents and President of University choosing the books for five year terms. School Law, 1884, pp. 4, 12.

48. *Washington.* The Territorial Superintendent and Territorial Board of Education adopt or re-adopt, every two years, a uniform series of text-books for use throughout the territory. School Law, 1883, p. 5.

49 *Wyoming.*—Nearly the same rule as in Washington Territory, except that the text-books selected hold for five years instead of two, and that the County Superintendents and Principals of Graded Schools aid in the selection. School Laws, 1878, p. 36.

ANNUAL REPORT

OF THE

BUREAU OF INDUSTRIES

FOR THE

PROVINCE OF ONTARIO,

1885.

Printed by Order of the Legislative Assembly.

Toronto:
PRINTED BY WARWICK & SONS, 26 AND 28 FRONT STREET WEST,
1886.

ERRATUM.

Page 63, Table No. XLIV. Value of animal albuminoids in No. 1 Provincial Prison, $55.40 should be $315.87 ; 0.6965 ct., should be 3.9717 cts. ; and 4.0309 cts. should be 7.3060 cts.

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FOURTH ANNUAL REPORT

OF THE

BUREAU OF INDUSTRIES.

To the Honourable Commissioner of Agriculture:

Sir,—I have the honour to present herewith the fourth annual report of the Bureau of Industries.

The statistics of the various industries of the Province have been carefully collected and tabulated, and in every subject of enquiry the first object has been to secure accuracy of statement.

Before referring to the statistics of Agriculture, a word of explanation may be offered as to the system under which they are prepared.

The extent of farm land occupied and cleared in each township is reported by municipal clerks to the Bureau, together with the area of wheat land sown in the preceding fall, as shown by the assessor's roll. In the month of June returns are received from farmers, giving for each farm the acreage of land occupied and cleared and the number of acres under the various field crops. These are not complete; that is to say, a very considerable number of farmers do not make reports of any sort; but the returns which are made and the total areas of occupied and cleared land as reported by municipal clerks furnish ample data for making very close estimates.

The agricultural statistics of Great Britain have been prepared in this way since the inception of the work there in 1866, and, although there were fears and prejudices which operated at first against the success of the undertaking, it is found that the number of farmers who refuse to give information is growing steadily less from year to year. Nor does any one question the general accuracy of the British statistics. For practical purposes they are as reliable as the returns of the census, and being published annually the tendency of every agricultural interest is clearly indicated.

So much depends on the state of the markets, the success and failure of crops and other conditions, that in computing the agricultural enumeration of a country census

figures are very uncertain data for the subsequent years of a decade. As an instance, take the production of wheat in Ontario: According to the census of 1871 we had, as the crop of the previous year, 7,891,989 bushels of spring wheat and 6,341,400 bushels of fall wheat; and the prevailing opinion throughout the decade was that spring wheat kept the lead. But the next census showed that the yield of spring wheat in 1880 was only 7,213,024 bushels, while that of fall wheat was 20,193,067. It will be observed, too, that the areas as given for the four years 1882-85 show considerable fluctuations in wheat, barley, rye, pease and other crops, and these changes are perfectly intelligible when studied in relation to market prices, the good or bad yield of a harvest, the demand for meat and dairy products, and other conditions which affect the agricultural industry.

As to the general accuracy of these statistics, there is at least one good test by which they may be tried. The average of fall wheat, as has been stated, is collected each year by township assessors, and returns of it are made to the Bureau by municipal clerks. Farmers also report their acreage of this crop in the June schedules filled up by them for the Bureau, and all the returns are tabulated in the office.* Now, trying twenty counties of the Province in which more than one-half of the fall wheat is grown, and comparing assessors' returns of 1885 with the Bureau's estimate, it is found that the former gives a total area of 524,982 acres, and the latter 541,932 acres. The difference is only about three per cent. How much of this discrepancy is due to errors in the assessors' returns of cleared land, how much to the difficulty of making the same returns twice where the actual acreage of fields is not known, and how much to any fault in the estimates as the result of insufficient returns, it is not material to enquire. The difference is hardly apparent when the aggregate quantities are compared. All other estimates are made on the same basis, and it is reasonable to infer that they are as near to actual figures as those of fall wheat. No other system short of an actual census is so likely to give safe results.

With statistics for four consecutive years now collected and tabulated, a beginning

* The schedule upon which farmers make returns to the Bureau in June, calls for statistics under the following heads: 1. Number of Acres in Farm; 2. Number of Acres cleared; 3. Acres of Fall Wheat sown; 4. Acres of Fall Wheat ploughed up or re-sown; 5. Acres in Spring Wheat; 6. Acres in Barley; 7. Acres in Oats; 8. Acres in Rye; 9. Acres in Peas; 10. Acres in Corn; 11. Acres in Buckwheat; 12. Acres in Field Beans; 13. Acres in Pasture; 14. Acres in Hay and Clover; 15. Acres in Potatoes; 16. Acres in Mangel-wurzels; 17. Acres in Carrots; 18. Acres in Turnips; 19. Horses—(1) Number of Working Horses (not including Breeding Mares); (2) Number of Breeding Mares; (3) Number of Colts and Unbroken Horses; (4) Total number of Horses; 20. Cattle—(1) Number of Working Oxen; (2) Number of Milch Cows; (3) Number of Store Cattle over 2 years; (4) Number of young and other Cattle; (5) Total number of Cattle; 21. Sheep—(1) Number of Coarse-woolled over 1 year; (2) Number of Coarse-woolled under 1 year; (3) Number of Fine-woolled over 1 year; (4) Number of Fine-woolled under 1 year; (5) Total number of Sheep; 22. Pigs—(1) Number over 1 year; (2) Number under 1 year; (3) Total number of Pigs; 23. Poultry—(1) Number of Turkeys; (2) Number of Geese; (3) Number of other Fowls; 24. Wool (1) Number of Fleeces Coarse Wool; (2) Weight in Pounds; (3) Number of Fleeces Fine Wool; (4) Weight in Pounds; 25. Pounds of Butter made last year; 26. Value of Farm Property—(1) Value of Land (not including buildings); (2) Value of Buildings; (3) Value of Implements (including Vehicles); (4) Value of Live Stock; 27. Rent Value of Farms per acre; 28. Wages of Farm Hands—(1) Per Year, with Board; (2) Per Year, without Board; (3) Per Month in working season, with Board; (4) Per Month in working season, without Board; 29. Wages of Servant Girls, per Week.

can be made of the study of comparative results: it is possible to deal with the statistics of each year in the relation which they bear to average quantities. Yet care must be taken to avoid hasty generalization. The common use of the term "average" is exceedingly vague and indefinite. To say of the temperature or rainfall in any season, the acreage or yield of crops, the number of live stock, the rate of wages, the cost of living, or of anything else the measure of which can be ascertained and stated in figures, that it is an average or above or below an average, is to make a statement that is only intelligible when the average is definitely known. Within certain limits the conditions which affect production and consumption undergo frequent if not constant change, and a knowledge of all the points touched between extremes in a series of years is necessary before we can determine a true mean. How long a time is required for this object, no one can pretend to say; but it must be obvious that the value of an average is increased by every additional year the returns of which supply data for its computation.

The growth and maturity of crops depend largely on the influences of heat, light and moisture. Too much or too little of any one of these at the proper season cannot fail to have bad results, and a bountiful and well ripened crop is not possible without a due and ample proportion of each. The records of meteorology have attained a large measure of completeness during recent years, and probably no other part of America is as well served in this respect as the Province of Ontario. Since the work of this Bureau began the number of stations reporting rainfall has been increased from fifty-five to one hundred and twenty-three, and the number reporting sunshine from two to ten. The records of temperature were very complete for some time previously; but for the past four years it may be fairly claimed that they are complete also for sunshine and precipitation. The following tables present the monthly averages of the Province for each of these years, and for the period of four years:

MEAN DAILY TEMPERATURE.

Months.	1885.	1884.	1883.	1882.	1882-5.
	°	°	°	°	°
January	15.54	13.82	13.95	20.31	15.90
February	8.58	21.59	17.57	28.51	19.06
March	16.60	27.85	20.91	30.19	23.89
April	38.55	40.85	39.21	39.97	39.64
May	54.14	53.36	50.09	49.97	51.89
June	62.37	67.48	64.15	62.88	64.22
July	70.08	65.86	66.60	68.09	67.66
August	63.37	67.27	64.76	68.33	65.93
September	57.81	63.72	55.79	60.94	59.56
October	46.24	49.52	45.65	51.71	48.28
November	37.69	33.20	37.45	34.64	35.74
December	26.33	23.07	24.48	23.78	24.41
Annual Mean	41.44	43.97	41.72	44.94	43.02

PRECIPITATION.

Months.	Rain.					Snow.				
	1885.	1884.	1883.	1882.	'82-5.	1885.	1884.	1883.	1882.	'82-5.
	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.
January	1.69	.33	.41	1.18	.90	21.6	37.4	23.9	14.6	24.4
February	.36	1.34	1.47	1.12	1.07	14.3	16.2	22.3	8.0	15.2
March	.29	1.38	.16	1.88	.94	16.1	8.6	22.5	11.8	14.7
April	1.53	.93	1.53	1.34	1.33	12.1	2.5	3.4	1.2	4.8
May	2.30	2.94	4.61	3.36	3.30	1.8	.....	.....	.....	.5
June	3.16	1.72	4.98	3.33	3.30	.....	.....	.....	.....	.....
July	2.71	3.45	4.22	1.70	3.02	.....	.....	.....	.....	.....
August	4.03	1.85	2.02	3.41	2.83	.....	.....	.....	.....	.....
September	3.19	2.67	2.79	2.39	2.76	.....	.....	.....	.....	.....
October	3.27	2.96	1.42	1.60	2.31	.....	1.5	.....	.....	.4
November	2.25	1.72	2.60	1.29	1.97	6.1	12.3	9.5	9.9	9.5
December	1.11	2.01	.66	.65	1.11	21.8	16.3	14.2	26.1	19.6
Totals	25.89	23.30	26.87	23.25	24.84	93.8	94.8	95.8	71.6	89.1
Add for snow	9.38	9.48	9.58	7.16	8.91	.....	.....	.....	.....	.....
Total precipitation	35.27	32.78	36.45	30.41	33.75	.....	.....	.....	.....	.....

HOURS OF SUNSHINE.

Months.	Sun above horizon.	1885.	1884.	1883.	1882.	1882-5.
	hours.	hours.	hours.	hours.	hours.	hours.
January	285.7	73.6	47.9	76.7	84.5	70.7
February	291.4	97.6	50.0	100.1	104.5	88.0
March	369.9	144.1	148.4	166.4	136.0	148.7
April	406.4	175.7	151.3	186.4	252.5	191.5
May	461.1	216.1	177.8	188.0	220.5	200.6
June	465.7	267.3	279.8	226.7	260.0	258.4
July	470.9	287.5	226.4	258.9	276.0	262.2
August	434.5	189.0	255.2	277.1	197.5	229.7
September	376.3	212.1	166.6	175.0	205.0	189.7
October	340.2	114.3	110.1	115.6	181.1	130.3
November	286.9	39.6	59.3	77.1	78.0	63.5
December	274.3	47.0	44.5	41.5	33.1	41.5
Totals	4463.3	1863.9	1717.3	1889.5	2028.7	1874.8

Observations collected about fifty years ago by J. B. Boussingault, a well-known French writer on agriculture, led him to conclude that in order to learn what varieties of useful plants may be successfully grown in any part of the temperate regions of the

earth, we must ascertain the mean temperature of the cycle in which vegetation begins and ends. We must enquire what time elapses between the sprouting of a plant and its maturity, and then determine the temperature of that period. In comparing these data with reference to the same species of plant grown in Europe and America, M. Boussingault found that the number of days between the start of growth and the date of ripeness was by so much the greater as the mean temperature was lower. He found the period of life to be longer or shorter as the mean temperature itself was lower or higher. "In other words," he says, "the duration of the vegetation appears to be in the inverse ratio of the mean temperature; so that if we multiply the number of days during which a given plant grows in different climates by the mean temperature of each, we obtain numbers that are very nearly equal." Thus the observations gathered by him went to show that for the growth and maturity of wheat an aggregate temperature of about 8,000° Fahrenheit is required; of barley, 6,000° to 7,000°; of corn, 7,500° to 8,000°; and of potatoes, about 10,500°. A greater amount of heat seemed to be necessary in France than in the States of New York and Ohio, and this was probably owing to different conditions of light and moisture, of which M. Boussingault does not take any account.

Now we possess for Ontario the record of all these conditions for the past four years, but we have no exact observations of the time required to grow and ripen any plant or fruit in relation to the conditions.

The subject is of practical value in so far as a knowledge of the facts would enable us to foresee the possibility of cultivating or acclimating in the several districts of the Province, throughout its large extent, varieties of grain, fruit, etc., successfully produced elsewhere without undertaking the cost, labour and risk of conducting experiments which could only be regarded as conclusive after they had been carried on for a series of years. The numerous attempts to grow sorghum, made in various localities during the past twenty years, will serve for illustration.

Our season of vegetation may be said to comprise the five months of May to September, a period of 153 days, and for this season the weather records of the past four years give the following averages of heat, light and moisture for the Province:

Daily temperature	61.86° Fahrenheit.
Aggregate of temperature	9,465.25° "
Precipitation	15.26 inches.
Sunshine	1,140.60 hours.

Of course in a country of the extent of Ontario—from Windsor within the circle of the great lakes in latitude 42° 25′, to Pembroke without the circle in latitude 46°—a country of varying altitudes and peculiarly situated in its relation to the lakes, varieties of climate are sure to be found. Yet in so far as temperature is an indication of climate the extremes are not wide apart, especially during the five months of May to September. For the purpose of a more detailed study of this subject in its relation to the different sections of the Province, the following tables are presented, showing the records for the five months in each year and the average of the four years:

AGGREGATES OF TEMPERATURE—MAY-SEPTEMBER.

Stations.	1885.	1884.	1883.	1882.	1882-5.
	°	°	°	°	°
Windsor	9,928.3	10,311.4	9,552.5	9,896.9	9,922.3
Goderich	9,294.5	9,725.3	9,254.2	9,464.4	9,434.6
Simcoe	9,499.0	9,808.8	9,303.6	9,568.1	9,544.9
Stratford	9,215.8	9,499.0	9,127.7	9,145.5	9,247.0
Hamilton	9,652.5	9,842.4	9,429.7	9,659.9	9,646.1
Toronto	9,216.6	9,433.1	9,052.7	9,363.1	9,266.4
Barrie	9,207.9	9,497.0	8,854.0	9,416.1	9,243.7
Peterborough	9,484.4	9,876.8	9,317.9	9,668.3	9,586.8
Cornwall	9,279.3	9,618.0	9,366.0	9,323.4	9,396.7
Pembroke	9,428.7	9,560.0	9,172.1	9,295.3	9,364.0

AGGREGATES OF RAINFALL—MAY-SEPTEMBER.

Districts.	1885.	1884.	1883.	1882.	1882-5.
	Inches.	Inches.	Inches.	Inches.	Inches.
West and South-west	16.64	12.84	19.88	15.83	16.30
North and North-West	16.46	12.40	18.77	12.25	14.97
Centre	14.92	12.69	18.17	13.61	14.87
East and North-east	14.25	12.54	17.70	15.06	14.89

AGGREGATES OF SUNSHINE—MAY-SEPTEMBER.

Stations.	1885.	1884.	1883.	1883-5.
	Hours.	Hours.	Hours.	Hours.
Windsor	1,165.6	1,158.5	1,142.6	1,155.6
Woodstock	1,113.1	1,160.4	1,059.4	1,111.0
Stratford	.....	1,011.6	1,142.0	1,076.8
Toronto	1,296.5	1,271.9	1,198.8	1,255.7
Barrie	1,113.4	1,022.5	1,014.1	1,050.0
Lindsay	1,254.6	1,222.2	1,232.2	1,236.3
Kingston	1.239.6	1,123.4	1,185.0	1,182.7
Cornwall	1,273.7	1,110.4	1,164.3	1,182.8
Pembroke	982.0	1,019.0	.....	1,000.5

As regards temperature, it will be observed that Windsor, in the south-western part of the Province, shows the highest aggregate, being 558.3° in excess of Pembroke in the north-eastern part. Yet the average temperature in Pembroke for the five months of

vegetation is higher than in Toronto, Stratford and Barrie ; and another curious fact is that the average temperature in Peterborough is only exceeded by Windsor and Hamilton. The lowest aggregate, however, is more than sufficient for the maturing of wheat, upon the basis of M. Boussingault's observations. It seems probable, indeed, that subject to other influences, wheat in Ontario matures considerably under the aggregate temperature of 8,000°. It may be added that one of the most noticeable of differences of climate in the Province is the length of the season. For instance, the mean daily temperature of Windsor for the month of April (computed from the records of the four years 1882–5) is 6.2° higher than that of Pembroke, and for the month of October it is 5.5° higher.

Rainfall appears to be pretty equally distributed over the Province ; but it is greatest in the west and south-west district—a region that, in the summer season, is visited with frequent thunder storms. These cross from Lake Huron to Lake Erie, and occasionally do considerable damage to the grain crops at harvest time. For this reason stained barley is the rule rather than the exception in that part of the Province, although in all other respects the district is well adapted for the growth of barley.

The comparative record of sunshine is given for a period of three years, owing to the fact that only two registers were in use until late in 1882. The total time of sun above horizon for the five months of May–September is 2,208.5 hours, and from the table it appears that the average of sunshine is about one-half of the possible. Pembroke falls below the average by 137.5 hours, and Barrie by 88 hours, while Lindsay exceeds it by 98.3 hours, and Toronto by 117.7 hours.

The area of farm land in the Province is ascertained each year from the rolls of township assessors. These rolls give areas under the heads of cleared land, wood land, and swamp, marsh or waste land, and every lot is entered as resident or non-resident. Strictly speaking, however, the returns do not show the exact area of farm land, for they include such portions as are covered by unincorporated villages, of which there are usually three or four in a township. The assessor, too, is liable to make mistakes in adding up long columns of figures, and frequently it is only when comparison is made with the returns of former years that an error is discovered. As a rule, township clerks readily undertake to correct a mistake of this sort when their attention is called to it, although in doing so they may be obliged to go over the additions of several years ; but occasionally they refuse to revise the work of a "bungling" assessor, as he is generally termed, and in every such case years of returns are required before the correct areas can be known. But these errors are being gradually eliminated, and when correct areas are fully known the margin of difference between all estimates computed from them and the exact figures of an enumeration will be reduced to a minimum.

The following table shows the rural areas of the Province for the past four years—the returns for 1884 and 1885 only giving the classification of resident and non-resident

lands, and those of 1883, 1884 and 1885 only giving the extent of swamp, marsh or waste land :

ASSESSED LAND IN TOWNSHIPS.

Classification.	1885.	1884.	1883.	1882.
	Acres.	Acres.	Acres.	Acres.
Total area returned	21,775,299	21,712,316	21,458,067	20,180,485
Resident land	20,671,554	20,567,632	.....	.....
Non-resident land	1,103,745	1,144,684	.....	.....
Cleared land	10,856,283	10,736,086	10,539,557	10,172,712
Wood land	8,883,004	8,914,719	8,825,337	8,668,120
Swamp, marsh or waste land	2,036,012	2,061,511	2,093,173	.....

The total area for 1882 is of resident land only, while that for 1883 is of resident and non-resident, but unclassified as such. The area of cleared land for 1882 is apparently too low, but as the returns were obtained for the first time in that year some errors in them doubtless escaped detection. The agricultural statistics of the report are limited to the area over which municipal organization extends ; the facilities of the Bureau for collecting information do not allow of getting returns from the scattered settlements in the unorganized districts.

Previous to 1882 the only records we had of the yield of crops in Ontario were those of the Government censuses. Beginning with 1842, we have had in forty-four years the statistics of only six harvests—those of 1842, 1848, 1851, 1860, 1870 and 1880,—and although very incomplete in regard to the acreage of crops, they have been accepted at home and used abroad as sufficient and conclusive evidence of the agricultural capacity of the country. But it must be obvious that data collected at such long intervals cannot be depended on to give trustworthy averages of anything so uncertain as a harvest. The decennial year may be favourable for the growth of crops or it may be unfavourable ; the census takes no account of the conditions of weather, and whether the harvest be bountiful or meagre the good or bad name given to the country by the published results must stand until the next enumeration. It is only when the statistics of each harvest year have been collected for a series of successive years that we can begin to compute averages with some assurance of their trustworthiness, and no better evidence can be offered of what the agricultural lands of a country are capable of producing than is furnished by such statistics.

The two tables which follow exhibit for the principal field crops the results of four successive harvests in Ontario, as shown by the reports of the Bureau. In the first are given for each year the total acreage of the several crops and the acreage of each in every thousand acres of cleared land, and also the annual average of the four years ; and in the second are given for each year the total production and the production per acre, together with the annual average of the four years :

ACREAGE OF THE PRINCIPAL FIELD CROPS.

Field crops.	Total area under crop.					Area per 1,( ) acres of cleared land.				
	1885.	1884.	1883.	1882.	1882-5.	1885.	1884.	1883.	1882.	1882-5
	acres.	acres.	acres.	acres.	acres.	acres.	acres.	acres.	acres.	acres.
Fall wheat	875,136	864,740	1,097,210	1,188,520	1,006,402	80.6	80.5	104.1	116.8	95.2
Spring wheat...	799,463	721,647	586,410	586,817	673,584	73.7	67.2	55.6	57.7	63.7
Total wheat ..	1,674,599	1,586,387	1,683,620	1,775,337	1,679,986	154.3	147.7	159.7	174.5	158.9
Barley	597,873	700,472	757,156	848,617	726,030	55.0	65.2	71.8	83.4	68.7
Oats	1,543,745	1,481,828	1,418,309	1,387,487	1,457,842	142.2	138.0	134.6	136.4	137.8
Rye.....	78,293	103,416	188,111	185,276	138,774	7.2	9.6	17.8	18.2	13.1
Pease	646,081	570,928	542,771	560,770	580,137	59.5	53.2	51.5	55.1	54.9
Corn	167,831	174,560	214,237	206,755	190,846	15.4	16.3	20.3	20.3	18.0
Buckwheat	61,776	65,836	67,802	50,035	61,362	5.7	6.1	6.4	4.9	5.8
Beans.....	24,651	24,878	25,907	19,787	23,806	2.3	2.3	2.5	1.9	2 3
Potatoes	159,741	168,757	166,823	160,700	164,005	14.7	15.7	15.8	15.8	15.5
Mangels...	16,435	18,341	17,219	15,791	16,946	1.5	1.7	1.6	1.5	1.6
Carrots.....	9,024	10,987	11,270	9,955	10,309	.8	1.0	1.1	1.0	1.0
Turnips	102,303	104,199	98,429	78,823	95,939	9.4	9.7	9.3	7.8	9.1
Hay and clover.	2,268,091	2,193,369	2,350,969	1,825,890	2,159,580	209.0	204.[illegible]	223.1	179.5	204.3
Totals.....	7,350,443	7,203,958	7,542,623	7,125,223	7,305,562	677.0	671.0	715.6	700.4	691.0

PRODUCTION OF THE PRINCIPAL FIELD CROPS.

Field crops.	Total production.					Average production per acre.				
	1885.	1884.	1883.	1882.	1882-5.	1885.	1884.	1883.	1882.	1882-5
Fall wheat, bush.	21,478,281	20,717,631	11,656,957	31,255,202	21,277,018	24.5	24.0	10.6	26.3	21.1
Spring wheat "	9,129,881	14,609,661	9,726,063	9,665,999	10,782,901	11.4	20.2	16.6	16.5	16.0
Total wheat "	30,608,162	35,327,292	21,383,020	40,921,201	32,059,919	18.3	22.3	12.7	23.1	19.1
Barley ....bush.	16,533,587	19,119,041	18,414,387	24,284,407	19,587,843	27.7	27.3	24.3	28.6	27.0
Oats ..... "	55,229,742	57,696,304	54,573,609	50,501,701	54,500,339	35.8	38.9	38.5	36.4	37.4
Rye ..... "	1,271,506	1,648,259	3,012,240	3,473,799	2,351,451	16.2	15.9	16.0	18.7	16.9
Pease ..... "	14,006,192	13,691,607	10,673,723	11,006,115	12,344,409	21.7	24.0	19.7	19.6	21.3
Corn (in ear) "	10,741,391	12,935,889	.....	13,420,664	12,365,981	64.0	74.1	.....	64.9	67.6
Buckwheat "	1,530,675	1,484,570	....	1,262,973	1,426,073	24.8	22.5	.....	25.2	24.1
Beans..... "	496,564	592,044	.....	409,910	499,506	20.1	23.8	.....	20.7	21.6
Potatoes .. "	21,091,144	27,546,261	16,400,782	18,432,145	20,867,583	132.0	163.2	98.3	114.7	127.2
Mangels... "	7,660,729	8,655,184	6,252,015	7,711,420	7,569,837	466.1	471.9	363.1	488.3	446.7
Carrots.... "	3,462,319	4,197,200	3,984,436	4,009,975	3,913,483	388.7	382.0	353.4	402.8	379.6
Turnips ... "	41,137,735	44,406,363	29,879,354	35,359,331	37,695,696	402.1	426.2	303.6	448.6	392.9
Hay and clover, tons.....	3,252,155	3,044,912	4,115,535	2,090,626	3,125,807	1.43	1.39	1.75	1.14	1.45

The total area under these crops shows only a moderate rate of increase during the four years. It is less than the rate of increase in the area of cleared land, being 677 for every 1000 acres of cleared land in 1885, against 700.4 for every 1000 acres cleared in 1882; but this is only what we might expect to find in view of the attention given to the dairy industry, and to the grazing of cattle and sheep for our export markets. Yet while the total area is greater by 225,000 acres, there is a noticeable falling off in particular crops. In wheat, for instance, the breadth has been reduced by 100,000 acres and it will be observed that great changes have taken place in the respective areas of the fall and spring varieties—the former being 313,000 acres less and the latter 213,000 acres more in 1885 than in 1882. This change is easily accounted for by the failure of the fall wheat in 1883, and the excellent crop of spring wheat in that and the following year. The low prices have no doubt been effective in reducing the breadth of this cereal, as it also has in the case of barley and rye. The area of the barley crop has been reduced in four years by 151,000 acres, and that of rye by 107,000 acres; and it appears that while in 1882 the average breadth sown to wheat, barley and rye was 276 acres for every 1,000 acres of cleared land, it was last year only 216 acres, or sixty acres less for each 1,000 acres of cleared land. The corn area has decreased since the almost complete failure of the crop by early frosts in 1883, and last year it was five acres less per 1,000 acres of cleared land than in 1882. On the other hand the area under oats has been gradually enlarging, the increase being 156,000 acres in four years—or from an average of 136.4 for every 1,000 acres of cleared land in 1882 to 142.2 for every 1,000 in 1885. The disappearance of the pea-bug after a quarter of a century's destructive visitation, which was generally noticed in 1884, has been promptly followed by an increase in the breadth of land devoted to this valuable feeding crop, and last year the area sown was 85,000 acres more than in 1882. The root crops have continued without much change throughout the four years, and the total increase of 23,500 acres in area has been almost wholly in turnips. The area in hay and clover was seriously reduced by winter exposure and spring frosts in 1882, but it is apparent that the average breadth under this crop is about one-fifth of the whole area of cleared land. Of the balance of the cleared land, 260 acres in every 1,000 was returned as pasture land in 1884, and 268 acres in every 1,000 in 1885; the rest is in orchard and garden, flax, hops, etc., and bare fallow. For the four years the average area under the principal crops was 7,305,562 acres, or 691 in every 1,000 acres of cleared land; and if to this we add 264 acres per 1,000 for pasture, which was the average for the past two years, there is left forty-five acres in every 1,000 for orchard and garden, bare fallow and the minor crops.

The second table, giving the aggregate and average production of crops and the average yield per acre, is valuable as showing the capacity of the land for cereal, root and grass crops, and for the evidence it affords of the importance of mixed husbandry. A comparison of the yield of each year with the average yield shows that in 1882 the hay and clover failed; in 1883, the fall wheat, corn, buckwheat and beans; and in 1885, the spring wheat. The loss in each of these years was a very considerable item by itself, and unquestionably the effect of it was felt in business circles; but with the rest of the crops yielding good harvests, and the

dairy and other branches of agricultural industry to supplement the farmers' income, and to add their quota to the volume of commerce, the embarrassment of the situation was greatly relieved. But even with the failures mentioned, it will be seen that as regards aggregate yield and yield per acre the average for each crop is remarkably good, and in this respect at least Ontario does not stand second to any Province or State on the continent. In the following table* comparison is made between our Province and eight of the principal grain-growing States of the American Union, for wheat, barley and oats :

COMPARISON OF AVERAGE YIELD PER ACRE.

	Fall wheat.				Spring wheat.				Barley.				Oats.			
	'85.	'84.	'83.	'82.	'85.	'84.	'83.	'82.	'85.	'84.	'83.	'82.	'85.	'84.	'83.	'82.
Ontario	24.5	24.0	10.6	26.3	11.4	20.2	16.6	16.5	27.7	27.3	24.3	28.6	35.8	38.9	38.5	36.4
Ohio	8.1	15.3	9.5	16.7	....	....	....	....	20.5	26.0	21.0	19.9	34.5	29.0	34.0	28.0
Michigan	20.0	14.0	12.0	17.3	....	....	....	....	27.0	23.0	21.0	25.2	35.5	32.0	36.7	33.3
Indiana	10.8	13.2	10.4	15.7	....	....	....	....	12.5	23.0	20.4	24.0	31.5	30.0	30.5	27.0
Illinois	9.2	12.6	10.0	16.0	....	....	....	....	22.3	24.0	26.0	22.5	32.7	33.0	33.0	37.4
New York	15.5	16.5	11.0	18.7	....	....	....	....	22.0	23.0	24.5	25.0	28.0	30.0	32.0	34.2
Pennsylvania	10.0	15.0	13.5	15.5	....	....	....	....	18.5	19.0	25.0	23.5	27.0	28.0	33.0	27.8
Iowa	....	....	....	....	11.2	12.5	12.7	11.0	23.0	23.0	23.6	21.7	32.5	32.0	36.0	31.8
Minnesota	....	....	....	....	11.5	16.1	13.2	13.3	23.8	26.4	21.0	23.3	34.7	35.3	37.0	40.0

The comparison is flattering to Ontario, and it deserves to be accepted as conclusive evidence of the suitability of our soil and climate for the production of cereals on an economic scale. It costs no more to grow an acre of wheat, barley or oats in Ontario than in New York, Michigan, or Ohio ; and, other things being equal, it is obvious that the farmer who gets from his land the largest yield per acre is the one whose capital and labour give the most liberal return in profits. The only exception which can be made to this statement is, that more thorough tillage of the soil and a more generous application of manures or fertilizers by one farmer than another will increase the cost of production ; but this may be regarded as in the nature of a permanent investment, and so regarded it is not an element in the calculation of cost. The farmers of Ontario, however, cannot be accused of cultivating their lands too well, or manuring them too highly. There are not a few among them who can boast of growing forty or forty-five bushels of wheat per acre year after year ; and their success is due to the care bestowed upon their fields—to the investments they have made in drainage, in tillage and in nutriment. Much more can be done on these lines than has been done hitherto, and Ontario farmers ought not to remain satisfied with less than the English average of 28 bushels per acre.

There is another aspect in which the statistics of our crops may be presented, viz. : the relation of one year's aggregate yield and yield per acre with the average of a series

* The American averages are taken from the Reports of the United States Department of Agriculture, and, like those for Ontario, they are computed from careful estimates and actual results.

of years. Taking the latter as 100, the percentages for 1885 of average aggregate product and of average yield per acre for the four years 1882-5 were as follows:

PERCENTAGES FOR 1885 OF THE 1882–5 AVERAGES.

Crops.	Per cent. of total yield.	Per cent. of yield per acre.	Crops.	Per cent. of total yield.	Per cent. of yield per acre.
Fall Wheat	101	116	Buckwheat	107	103
Spring Wheat	85	71	Beans	99	93
Barley	84	103	Hay and Clover	104	99
Oats	101	96	Potatoes	101	104
Rye	54	96	Mangel-wurzels	101	102
Peas	113	102	Carrots	88	101
Corn	87	95	Turnips	109	102

The crops of last year whose total yield fell below the average of four years were spring wheat, barley, rye, corn, beans and carrots; while those whose yield per acre fell below the average of the four years were spring wheat, oats, rye, corn, beans, and hay and clover.

The statistics of live stock in the Province are obtained at the same time and in the same way as the statistics of crops. The reports have been uniformly favourable for the past four years in regard to the health and condition of animals; for, while fodder of all kinds has been generally plentiful, the country has been singularly free from the occurrence of all contagious diseases excepting those of a mild type. Consequently the circumstances were propitious for the breeding and rearing of animals, and until 1884 the market prices gave an additional encouragement to the increase of herds. Since then, however, the market has been less active, especially for cattle and sheep intended for the English markets, as well as for hogs for the home market, and the effect is visible in the returns.

HORSES.

Sub-classes.	1885.	1884.	1883.	1882.
Working Horses	311,587	303,474	349,552	336,932
Breeding Mares	95,963	93,910	87,380	70,596
Unbroken Horses	151,259	138,569	123,201	96,076
Totals	558,809	535,953	560,133	503,604

I think it is probable that owing to the wording of the schedule in the first and second years many farmers made a double return of breeding mares—as breeding mares and working horses, when they were used for both purposes—and hence the relatively large number of working horses in the statistics for those years. To prevent the possibility

of this mistake being continued, the sub-classes were more clearly specified in the schedule of 1884; and it is fair to assume that the decrease in the number of working horses for that year is only the correction of an error, not an actual falling away in the number. The market for Ontario bred horses in the United States and in Manitoba has been continuously good, and it offers a sufficient explanation of the large and steady increase apparent under the head of young and unbroken horses.

CATTLE.

Sub-classes.	1885.	1884.	1883.	1882.
Working Oxen	15,302	16,793	17,071	14,566
Milch Cows	750,005	710,519	690,437	665,382
Store Cattle over two years	373,856	384,453	321,471	272,208
Young and other Cattle	837,317	813,905	789,075	610,527
Totals	1,976,480	1,925,670	1,818,054	1,562,683

Here, as might be expected, the greatest increase of the four years took place in the lists of milch cows and young cattle. The dairy industry has made wonderful strides in those years, as will be seen by the statistics of the cheese factories of the Province and the Trade tables of exports. Store cattle over two years show an equally large increase in numbers down to 1884, but with the fall in prices in that year the breeding of this class of animals received a sudden check. It remains to be seen whether the dulness of the cheese trade last year will have a similar effect on the numbers of milch cows and young animals; but the partial revival of both the butter and cheese markets has probably averted this misfortune.

SHEEP.

Sub-classes.	1885.	1884.	1883.	1882.
Coarse-woolled (over one year)	908,762	994,608	1,043,080	933,143
" (under one year)	547,952	595,996	580,095	676,362
Fine-woolled (over one year)	176,248	176,341	150,281	178,299
" (under one year)	122,643	123,788	95,328	127,499
Totals	1,755,605	1,890,733	1,868,784	1,915,303

The fine-woolled sheep are barely holding their number, but the coarse-woolled have been decreasing steadily and the returns last year are 152,791 less than for 1882. Similar reports are made for Ohio, Michigan and other American States, and there as well as here the low price of wool is given as the chief moving cause. In Michigan last year the decrease was 94,000, in Ohio it was 147,000, in Pennsylvania it was 300,000, and for the Union it was 2,038,000. It is interesting to notice, however, that in Ontario

the wool-clip maintains a high average, and apparently it is an increasing one. The average weight per fleece of coarse wool for the four years was 5.45 pounds, and of fine wool it was 5.10 pounds; whereas last year it was 5.58 and 5.14 pounds for the two classes respectively. The total clip last year was 6,086,866 pounds, and its value computed from the average of the principal markets in the Province was $1,059,115.

SWINE.

Sub-classes.	1885.	1884.	1883.	1882.
Hogs over one year	225,512	257,711	245,996	252,415
Hogs under one year	596,750	658,447	660,731	597,811
Totals	822,262	916,158	906,727	850,226

The low price of pork during the past two years has doubtless influenced farmers to some extent, but the change has not been sufficient to account for a decrease of nearly 100,000 in one year. A more effectual cause was the large mortality among young pigs last spring, owing, it is supposed, to the severity of the weather at the time they were dropped. The reports state that in many cases whole litters were lost.

POULTRY.

Sub-classes.	1885.	1884.	1883.	1882.
Turkeys	428,233	445,532	355,635	310,058
Geese	476,942	540,130	491,093	533,357
Other Fowls	5,431,629	5,251,944	5,000,616	4,508,705
Totals	6,336,805	6,237,606	5,847,344	5,352,120

The breeding of poultry has now become an important feature in the agricultural industry of the Province, and the statistics show that in counties near to the chief towns and cities poultry are kept in large numbers. The egg trade of the Province has been rapidly growing in volume during the past fifteen years, and within a more recent period a trade in dressed fowls has been established which promises to give handsome profits for the capital invested in it. As an instance of what can be done in this line it is only necessary to refer to the annual Fair held at Smith's Falls. A few years ago that section of country was visited with a plague of grasshoppers. Turkeys were introduced and bred in the hope that they would rid the country of its plague, and they succeeded effectually. How to dispose of the stock of turkeys to advantage then became a problem, and this was solved by the institution of an annual Fair at the approach of the Christmas season. This Fair has resulted so satisfactorily to the farmers that they have gone extensively into the breeding and fattening of fowls, and the statistics for the counties of Leeds, Grenville,

Lanark and Carleton show to what large proportions the industry has already attained. At the last Fair about nine car-loads of dressed poultry were purchased by dealers for the New York and Boston markets, and no doubt other and larger markets will be found as the industry developes.

The cheese factory system has been carried on in the Province with great success during recent years, in spite of an unsteady and fluctuating market. In 1882 it appeared from information given to the Bureau that there were 471 factories in operation ;* in 1883 this number was increased to 635 ; in 1884 there were 751 ; and in 1885 there were 752. For the first of these years returns of production were received from 305 factories ; for the second year, from 440 ; for the third year, from 567 ; and for the fourth year, from 536. An estimate based on these returns gives the following aggregates of production and value each year for all the factories in the Province, together with the annual average of the four years :

CHEESE STATISTICS OF FOUR YEARS, AND ANNUAL AVERAGE.

	1885.	1884.	1883.	1882.	1882-5.
Milk used..... lbs.	733,437,254	685,964,727	539,696,197	409,144,701	592,060,720
Cheese made ..... "	71,209,719	66,939,573	53,513,032	39,346,095	57,752,105
Value of cheese..... $	5,781,469	6,998,889	5,589,339	4,259,141	5,657,209
Value per lb..... cts.	8.119	10.456	10.445	10.822	9.795
Milk to make 1 lb. of cheese. lbs.	10.300	10.248	10.085	10.398	10.251

The industry is not carried on to the same general extent in all parts of the Province. There are considerable areas in which no factory has been established, either because the milk can be more profitably disposed of by feeding it to young cattle or supplying the city markets, or because the farmers make butter and give more attention to field and fruit culture. In six counties bordering on Lake Ontario, from Lincoln to Ontario, there are only one-half as many factories as in the single county of Oxford, and not one-third of the number in Leeds and Grenville ; but those six counties are chiefly devoted to field, orchard and garden culture, and they supply large quantities of milk daily to the Toronto, Hamilton and St. Catharines markets.

The principal dairy districts are in the eastern and western sections of the Province, of which the towns of Brockville and Ingersoll are regarded as the centres. Between these districts a friendly rivalry has existed for a number of years, and leading makers and dealers have vied with each other in efforts to extend the industry and to improve the quality of the product. Valuable service also has been rendered by the Dairymen's Associations, and their annual Reports have given to makers much useful information in

* It is quite likely that the returns of factories in operation this year were not full, for according to the census there were 551 in the Province in 1880, whose value of product was $4,668,078. In 1870 the number was 323, and the value of product was $1,454,702.

addition to the interest and enthusiasm awakened at their conventions. But no doubt the best results have flowed from the system of personal instruction adopted in both districts, and from the counsels of dealers who know the requirements of the market and are able to give practical remedies for existing defects or to suggest methods for turning out an article more suited to the varying tastes of consumers—or rather to their improving tastes, for the demand seems to be constantly growing for cheese of the finest quality.

But the rivalry has an interest owing to circumstances of a nature not so susceptible of control. In the western district the season opens a little earlier, so that the average time during which factories have been operated in the past four years is three days longer in the west than in the east, being 162 days in the former and 159 in the latter. The average yield of milk per cow, according to the returns of factories, is also higher in the west than in the east, being 2,952 pounds in the former and 2,749 in the latter. Reduced to the unit of a day's yield, this is equal to 18.26 pounds in the west and 17.34 in the east, or almost one pound per day in favour of the western cow. But the advantages of a longer season and of a higher yield of milk are very nearly offset by the greater curd product of milk in the east. In the western counties the average of four years is one pound of cheese to 10.4265 pounds of milk, while in the eastern counties it is one to every 9.9878 pounds. On this basis the comparison stands, 1.75 pounds of cheese per cow daily in the west to 1.73 in the east, or (eliminating errors) a showing of only 2.60 pounds in favour of the western cow in a season of 159 days. With the advantage of the longer season, however, the showing is 7.85 pounds in her favour. The results are surprisingly close, yet it is apparent that the rivalry between the two districts might very profitably turn in the direction of increasing the averages along all the lines, and especially the average of milk yield in the season.

Why the average price of cheese should be higher in the west than in the east is to some extent a subject of speculation; but in view of the fact that the product of both districts reaches a common market, the most obvious inference is that difference in the selling price to dealers is due to difference in the quality of the cheese. As long as the discrimination continues, and whatever the cause of it may be, it means a loss of about $170,000 a year in the eastern counties, on the present production.

In several counties of the Province, foremost of which are Wellington and Ontario, numerous herds are maintained for breeding and grazing purposes, and the general infusion of Shorthorn blood especially has greatly encouraged the rearing and fattening of cattle for the home and English markets. This branch of live stock enterprise, as is well known, requires that a large quantity of milk be fed to calves on the farm, and is seldom pursued conjointly with the dairy industry in any of its forms. The opinion widely prevails that for breeding and feeding purposes on a successful scale young animals must be given a generous allowance of full milk; but although it does not seem likely that cattle of good stamina can be reared where the whole of the milk is sent to the cheese factory or to the city market, the experiment is not yet generally regarded as conclusive so far as relates to making butter and feeding calves on the skim-milk. The Model Farm creamery, the patrons of which are breeders and feeders of thoroughbred and high-grade stock, will doubtless afford a good test, especially in connection with systematic experi-

ments on the Farm, and it is hoped that all the results there will be carefully noted. But the factory system, wherever it has been established and fairly tried, appears to have won the confidence of the farmers. They are not disheartened or dismayed by the fluctuations of the market, for the experience of twenty years shows that these are not more frequent nor is the disturbance more serious than happens with any other agricultural product. The consumption of cheese has increased enormously in that period, and there is no reason to fear that a good article will cease to be in demand or that the price of it will fall below the cost of production.*

The value of farm property in the tables is made up from the returns made by farmers in the June schedule, and is given under the heads of (1) land (not including buildings), (2) buildings, (3) implements (including vehicles), and (4) live stock. The circular calls for the fair market value of each class of property; but in the first year of collecting these statistics it was evident from the remarks made in many instances, and in spite of assurance being given to the contrary, that the enquiry had some scheme for levying taxes in view,—hence the comparatively low valuation in the returns for that year, as appears in the following table:

VALUES OF FARM PROPERTY.

——	1885.	1884.	1883.	1882.
	$	$	$	$
Land	626,422,024	625,478,706	654,793,025	632,342,500
Buildings	182,477,905	173,386,925	163,030,675	132,711,575
Implements	48,569,725	47,830,710	43,522,530	37,029,815
Live Stock	100,690,086	103,106,829	100,082,365	80,540,720
Total	958,159,740	949,803,170	961,428,595	882,624,610

The depreciation of land naturally follows a decrease in the value of its products, and for the past two years the low prices of cereals have largely diminished the farmer's revenue. Owing mainly to the fall of prices, but partly also to the failure of one or two crops, the average value of our wheat, barley, oats, rye and pease harvests for the past three years is nearly $26,000,000 less than the value of those crops in 1882, and $7,000,000 less than the average value of the four harvests. The reduced valuation of the land is a natural consequence of these circumstances, and the agreement of one with the other is evidence of the intelligence and care with which the returns made by farmers to the Bureau are prepared. A large and steady increase is apparent in the value of farm buildings, being at the rate of $10,000,000 a year since 1883; but although this is a large sum in the aggregate, it is not more than an average of $55 for each farm. A steady

* The imports of cheese into Great Britain and Ireland grew from 853,277 cwt. in 1865, valued at £2,463,299, to 1,927,139 cwt. in 1884, valued at £5,001,635, being an increase in quantity of nearly 126 per cent. During the same period the population grew from 29,925,177 to 35,961,540, an increase of only 20 per cent. The exports of cheese from Canada grew from 4,503,370 pounds in 1869, valued at $549,572, to 79,655,367 pounds in 1885, valued at $8,265,240.

increase is apparent also in the value of implements, but much lower between 1884 and 1885 than between 1883 and 1884. The diminution in the value of live stock since 1884 accords fairly with the fall in market prices, although it is greater than appears owing to a considerable increase in the number of horses and cattle. The same result is found in the statistics of the States of Michigan and Ohio; and there as well as in Ontario the returns show an incerase in the number of horses and cattle and a decrease in the number of sheep and hogs. In Ohio the valuation of horses, cattle, sheep and hogs on 1st January, 1885, was $141,839,205, and on the 1st of January this year it was $132,396,045—a decrease of $8,443,160; and in Michigan the valuation made at the same periods respectively was $76,107,323 and $70,745,306—a decrease of $5,362,017. For the whole of the United States the valuation on 1st January, 1885, was $2,293,931,286, and on 1st January this year it was $2,201,778,766—a decrease of $92,152,520, notwithstanding an increase in the number of all classes of animals excepting sheep. The average value per head of horses in the United States in 1885 was $73.70; of milch cows, $29.70; of other cattle, $23.02; of sheep, $2.14; and of hogs, $5.02. The returns made by Ontario farmers do not give the values in detail, but using the American averages the values of animals by classes in 1885 would be as follows: Horses, $41,184,223; milch cows, $22,275,148; other cattle, $28,233,455; sheep, $3,756,995; hogs, $4,127,755—a total of $99,577,576. This allows $1,112,500 for the value of poultry, to make up the total of $100,690,086 for all classes of live stock according to the returns of farmers; so that compared with the United States statistics the Ontario valuation is fair. Compared with those of Ohio and Michigan it is moderate, for there is no reason to believe that farm animals in either of those States are better than in Ontario; yet compared on the basis of Ohio averages the Ontario valuation would be greater by $14,000,000, and on the Michigan average it would be greater by $16,000,000.

The values of the wheat, barley, oats, rye and pease crops of the Province in the past four years, together with the average of the four years and the average per acre, are presented in the following table:

VALUES OF THE PRINCIPAL CROPS.

Crops.	Total home value.					Average value per acre.				
	1885.	1884.	1883.	1882.	1882-5.	1885.	1884.	1883.	1882.	1882-5
	$	$	$	$	$	$	$	$	$	$
Fall Wheat ..	17,504,799	16,677,693	12,239,805	31,567,754	19,497,513	20.00	19.29	11.11	26.57	19.37
Spring Wheat.	7,358,684	11,892,264	10,406,887	10,245,959	9,975,948	9.20	15.48	17.75	17.48	14.81
Barley	9,126,540	10,247,806	10,496,172	15,784,865	11,413,846	15.27	14.63	13.86	18.60	15.72
Oats	17,397,369	19,097,476	20,737,971	21,715,731	19,737,137	11.27	12.89	14.62	15.65	13.54
Rye	701,871	984,010	2,018,201	2,223,231	1,481,828	8.96	9.52	10.73	12.00	10.68
Pease	8,123,591	8,817,395	7,578,343	8,144,525	8,165,963	12.57	15.44	13.96	14.52	14.08
Total.....	60,212,854	67,716,644	63,477,379	89,682,065	70,272,235	13.26	15.24	13.83	18.85	15.33

These values are computed from average prices made up from quotations of the principal markets of the Province for the second half of each year.* They present an interesting study, especially in relation to the averages of total value and of value per acre; for it appears that as to total value they stand in the order of (1) oats, (2) fall wheat, (3) barley, (4) spring wheat, (5) pease and (6) rye, while as to value per acre they stand in the order of (1) fall wheat, (2) barley, (3) spring wheat, (4) pease, (5) oats and (6) rye. The values of other field crops, (viz.: corn, buckwheat, beans, hay potatoes, carrots and turnips), have only been computed for the past year, their aggregate being $55,530,069. Hay is of all our crops the most important in the aggregate, its value last year at the average of market prices being $32,033,727, or $14.12 per acre.

Of course it is not implied that these values represent a season's proceeds of the agricultural industry of the country in gold or currency. A large proportion of the field crops is consumed on the land which grows them, and through conversion into meat and dairy products, into bone and muscle, or into manure for enriching the soil, the resources of yearly revenue are established, means of labour and reproduction are supplied, and the permanent capital of the land is maintained and increased. The average annual value of our cheese product during the past four years was $5,657,000, and this is only one instance in the general process of converting raw material into manufactured article carried on to a greater or less extent by intelligent husbandmen in the country; for every well-managed farm is the scene of operations in trade and manufactures as real and practical as any that the world affords.

The mining industry of the Province is slowly growing in importance; but although there are stores of the precious and economic metals of great value and unknown extent, their development hitherto has been slow and fitful. In Ontario as well as in the United States speculation has been far more active than business enterprise, and it is easier to place a mine on the market for a million dollars than to sell it for a hundred thousand. Our methods in the working of mines have been on a small scale precisely the same as those pursued in the United States on a large scale, and we have had the same experience. The money required for carrying on work is ventured in the hope of realizing a speedy fortune from the discovery of a bonanza; operations are marked by rashness and extravagance, and commonly they end in disappointment and failure. In volume XIII of the United States census, recently issued, the general record of these enterprises is summed up by Mr. Clarence King. He says:

In some foreign countries the mining industry possesses a stability and steadiness which result largely from government ownership and supervision; and these causes, however inapplicable in this country, have certainly had an economic effect. When such is the case, a far-sighted policy is always shown; plans are

* The prices compiled from daily and weekly quotations of the principal markets of the Province for the last half of each year are as follows:

	1885.	1884.	1883.	1882.
Fall Wheat, per bushel	$ 0.81	$ 0.80	$ 1.05	$ 1.01
Spring Wheat "	.81	.81	1.07	1.06
Barley	.55	.54	.57	.65
Oats	.32	.33	.38	.43
Rye	.55	.60	.62	.64
Pease	.58	.64	.71	.74

laid with a view to the remote future, and the plant and mine opening are substantial to a degree seldom seen here. The American miner, expecting to work out his mine in a few years, would hardly think of using brick work or masonry in his galleries, etc., as is done in some of the foreign mines. Where an investment is made with the expectation of small, steady returns, extending over a long series of years, as has been the case with the greater portion of the enterprizes conducted by government or by strong companies abroad, the most substantial work is in the end the most economical: but here, where the effort is too often to get out the largest amount of bullion in the shortest time possible, plans are seldom laid with a view to the remote future. The number of precious-metal mines in this country which have continued to be productive during a period of ten years is very limited, and the life of many of the most famous and successful ones has been far shorter. Indeed, a bonanza which has required two or three years to exhaust is a rarity, and when it is considered that many of the most productive mines have yielded merely a single large ore-body at or near the surface, the short average life is seen to be owing to natural causes as well as to the rapidity of operation. An engineer is hardly to be blamed, then, if he plans for the exigencies of the immediate present; on the one side he is pressed by the stockholder, clamorous for speedy profits, and on the other hand he realizes that the chances of a long period of bonanza are slight. His policy is forced upon him. He aims to secure given results by the most direct means, and when the object has been attained he cares little whether his drifts cave and the structures over his hoisting works and mills fall in, if they have served their purpose.

This is the record of Silver Islet and East Silver Mountain in our own Province, one of which has yielded millions of ore and the other nothing beyond a rich surface show. But signs of an improved method are appearing, and during the past year substantial progress has been made in several quarters. Our mines of iron, copper, silver, gold, apatite, asbestus, salt, etc., present a field for enterprise that has been too long neglected; and with the union of capital and skill we may confidently hope for a development of these resources which, in the near future, will form no unimportant part of the industrial products of the country.

Some difficulty has been experienced in collecting statistics and other facts of mining operations; not that information has been refused in any case, but that owing to the nature of it the owners or managers of mines neglect to make up reports giving the particulars called for. They appreciate the value of yearly reports of the industry, and wherever personal visits have been made they have been found willing and anxious to give any details relating to the progress made, number and wages of employees, quantity and value of output, etc. But while a personal visit to the various mines is desirable—and for gaining a proper knowledge of the industry local observation and enquiry are occasionally essential—it is an expensive mode of gathering facts, and hitherto the pressure of other duties has been in the way of making complete rounds of the mining fields and collecting full details of their yearly operations. The subject is one in which the country at large has an interest, and in regard to this as well as some other industries it may be found necessary to extend the powers of the Bureau so as to make the supply of information a duty.

A subject of widespread interest at the present day is the condition of the working classes. How they are employed, what wages are paid, and how much it costs them to live are data the knowledge of which is indispensable for a proper study of their condition. The information contained in the tables of this Report has been gathered directly from the parties most interested in the supply of it and most competent to give it—the workers themselves and the persons and companies that employ them. There is one exception, however, that of farm laborers. Men of this class are isolated in the

country, without organization of any kind, and the only means of reaching them is personal canvass ; consequently I have in their case taken the returns of employers only.

For the last three years the wages of farm laborers have been compiled from the June schedule of farmers and they exhibit a steady decrease of wages in these years. The average rate to men with board, employed by the year, was $173 in 1883, $167 in 1884, and $160 in 1885 ; while to men without board the rate in excess was $91, $90 and $93 for each year respectively. To men employed by the month during the season of field work the average rate with board was $20.37 in 1883, $19.44 in 1884 and $17.32 in 1885 ; and to men without board the allowance in excess was $9.84, $9.67 and $9.86 per month for each year respectively. The cause of this decrease will be readily understood when it is stated that three thousand self-binding reapers were sold to the farmers of the Province in 1884 and seven thousand in 1885, and that each of these reapers dispenses with the labor of four men at what in former years was the season of the farmer's greatest need. The result is, that now the supply of farm laborers is abundant and that farmers are given a choice of the best men at wages considerably lower than the rate of three years ago. It is only in the class of domestic servants that a scarcity exists, and with respect to these it seems probable that relief will only come with a reform in the conditions of service—when drudgery will be lightened by the more general introduction of modern conveniences and the use of labor-saving appliances.

The statistics of labor and wages in the towns and cities cover a much larger field. Skilled and unskilled laborers of almost every class and occupation are represented in the tables, and details are given with as much fulness as possible consistent with the respect due to personal sentiment, avoiding what might be regarded as simply inquisitorial.

The tables of weekly wages in April and October are compiled from returns obtained from employers and employees—those of the former by an officer of the Bureau who visited all the towns and cities for that purpose, and those of the latter by local agents. A comparison of the weekly wages in 1884 and 1885 is presented in the following table :

AVERAGE WEEKLY WAGES IN 1884 AND 1885.

	April week.		October week.		Both weeks.	
	1885.	1884.	1885.	1884.	1885.	1884.
Employers' returns	$7 80	$7 90	$7 82	$7 81	$7 81	$7 85
Employees' returns	8 14	8 35	8 23	8 14	8 19	8 24
Average of both	7 89	7 96	7 92	7 85	7 90	7 90

These averages are computed from returns for 17,347 workers in April and 17,856 in October, made by employers of labor ; and for 2,707 workers in April and 2,811 in October made by employees themselves. In the case of the latter, however, 84.5 per cent. of the whole are males over sixteen years, whereas in that of the former they are only 75.8 of the whole. Hence the lower average of wages according to the returns made by employers ; while, of course, the preponderance of numbers inclines the scale to their side in computing general averages from the two classes of returns.

The yearly tables, which give earnings, cost of living, etc., are necessarily compiled from returns made by workers only. They present many interesting features for study; but whatever they may prove or disprove in the course of time, the scientific method demands cautious reserve of their use in the solution of any one of the labor problems which perplex the minds of statesmen and economists, capitalists and workmen. Patient collection of data should precede every generalization, and our facts or particulars must be of sufficient scope to distinguish between what is incidental and what is regular or general before we can safely venture to lay down laws which govern the interdependence of capital and labor. What is true of the relations of those great interests this year was not in every respect true of their relations a year ago, and very probably will not be true of them a year hence. But what they are, and were, and shall be, we may know if we investigate; and, knowing, I believe it is possible so to regulate them as in the highest degree to advance the interests alike of capital and labor. An idea of the condition of the labor market during the past two years may be formed from the following synopsis of workers' returns, which are grouped in the order of earnings to cost of living:

AVERAGES OF TIME, EARNINGS AND COST OF LIVING IN 1884 AND 1885.

		No. of workers.	Days employed.	Yearly earnings.	Cost of living.	Surplus or deficit.
Earnings more than cost of living	1884	1342	278.49	$454.75	$338.75	$116.00
	1885	1621	278.79	431.87	330.50	101.37
Earnings equal to cost of living	1884	1265	260.79	331.51	331.51	.....
	1885	710	271.72	321.50	321.50	.....
Earnings less than cost of living	1884	246	214.97	259.96	326.42	—66.46
	1885	306	230.52	317.16	368.66	—51.50
Average for all workers	1884	2853	265.17	383.31	334.47	48.84
	1885	2637	271.28	388.85	332.50	56.35

No other evidence is needed to prove that the condition of workingmen in those years has not been satisfactory than the large proportion whose cost of living was either equal to or more than their earnings. The average time of employment of those whose earnings were more than the cost of living—the most fortunate class of workers—was almost exactly the same in both years, and it was thirty-three days short of full time; whereas in the case of those whose cost of living was equal to earnings it was for both years forty-five days less than full time, and in the case of those whose cost of living was more than earnings it was eighty-nine days less. In the tables for 1885 cost of living is given in some detail, showing how much of it was for rent, and how much for fuel, clothing and food. In the nineteen towns and cities from which returns have been obtained the average cost of rent for the year is $74.41, and of fuel $40.53. These are items of expenditure for objects of common benefit to the family of a worker, and their cost bears no accurate relation to the number of its members. The cost of clothing to a worker with dependents is $19.03 per capita, while to one without dependents it is $55.09—an amount that would seem extravagant but for the well-known disposition of persons having no one else to provide for to spend liberally on dress and adornment. Food is the most important item, and the average cost per capita in the nineteen towns and cities

is $47.67. The worth of this average may be questioned, as no one can say definitely what the quantity and cost of his food supplies are without keeping accounts. But fortunately we are able to verify the returns of workmen by others which have been prepared with the greatest care possible, the accuracy of which cannot be disputed. The tables of food consumption at thirteen public institutions in the Province, embracing schools and colleges, prisons and asylums, show that the average cost of a ration of food is 12¼ cents, or $44.71 a year per capita; and in view of the more advantageous rates at which supplies may be purchased for those institutions, and the relatively small quantity which goes to waste, the average of $47.67 a year per capita cannot be regarded as extravagant for the family of a workingman. Now as the average number of persons in a family, including the worker, is shown by the tables to be 4.54, the cost of a year's food is $216.42, and of a year's clothing $86.39; or a total for rent, fuel, food and clothing of $417.75. The difference between this sum and the average yearly earnings of workers with dependents ($447.60) is a small margin out of which to provide for other expenses of the family; and the picture would be much darker than it appears but for the fact that about fifteen per cent. of the number of this class making returns are owners of the dwellings they occupy.* The prospect under these conditions is not encouraging to the working classes; but it would be premature to say that the conditions are normal. Whether there be a fair distribution of the products of labor or not, can only be determined by pursuing the inquiry along another line. The cost of production and the value of the thing produced must be known before an opinion can be formed or a conclusion reached; and if derangement of the relations between capital and labor can be adjusted in no other way, means ought to be found to uncover all details in the processes of industry.

Various other tables are given relating to the industries and institutions of the country, but they are principally abstracts of sessional papers and other public documents and do not call for special reference or comment here. They are valuable chiefly because of bringing together statistics extending over many years, in which growth and progress may be traced and comparisons made without the trouble of researches extending through scores of volumes, to which a few people only have easy access.

In conclusion, I desire to express grateful thanks to correspondents, farmers, manufacturers, workingmen and others who have given information to the Bureau on a variety of subjects and furnished material which, I trust, will be found of some value in studying the industries of the country; and to the clerks of the office who have tabulated a vast mass of returns, an acknowledgement of the faithfulness and efficiency of their service is as justly due as it is cheerfully accorded. The imperfections and shortcomings of the Report are to no one better known than to the writer.

Your obedient servant,

BUREAU OF INDUSTRIES,
TORONTO, May 1, 1886.

A. BLUE, *Secretary.*

* The inquiry does not extend to liabilities against dwelling-house property, and it is impossible to say how much of surplus earnings is required to pay off these as they mature. All such payments are in the nature of an investment, and not to be counted as part of the cost of living.

PART I.

THE WEATHER AND THE CROPS.

THE WEATHER.

The meteorology of 1885 presents some very marked features, and, when compared with that of the previous year, a few striking contrasts. The tables given below relate to the six growing months of the two years, and a careful examination of them will prove instructive, not only as a meteorological study, but as showing how closely the course of the crops can be traced in the variations of the weather. The first table gives the record of mean temperature at ten of the principal stations, which are fairly representative of every district in the settled portion of the Province :

MEAN TEMPERATURE AT TEN STATIONS IN 1884 AND 1885.

Stations.	April.		May.		June.		July.		August.		September.	
	1885.	1884.	1885.	1884.	1885.	1884.	1885.	1884.	1885.	1884.	1885.	1884.
	°	°	°	°	°	°	°	°	°	°	°	°
Windsor	43.3	44.1	56.3	58.5	65.5	70.4	74.4	70.0	65.6	69.9	62.6	68.3
Goderich	38.8	39.5	53.1	52.7	61.4	67.8	68.3	65.2	62.1	67.4	58.8	64.9
Simcoe	40.3	41.2	54.0	55.1	61.7	67.8	71.5	66.1	64.5	66.6	58.6	65.1
Stratford	37.9	40.6	54.1	52.8	61.2	68.0	67.9	64.0	60.8	64.3	57.1	61.5
Hamilton	40.1	41.6	53.4	51.9	65.0	67.3	71.1	67.0	66.0	69.5	59.9	66.1
Toronto	37.7	40.9	51.7	51.2	60.6	65·1	68.3	64.3	63.5	65.6	57.0	62.2
Barrie	35.8	37.9	53.1	50.8	60.3	66.6	68.7	65.0	62.1	66.2	56.6	61.9
Peterboro	38.0	41.6	56.0	54.6	62.5	68.9	70.6	66.9	63.8	68.3	56.9	64.2
Cornwall	37.4	41.2	55.1	53.5	62.3	66.7	68.7	64.8	62.5	67.7	54.5	61.7
Pembroke	36.2	39.9	54.6	52.5	63.2	66.2	71.3	65.3	62.8	67.2	56.1	61.3
Averages ..	38.55	40.85	54.14	53.36	62.37	67.48	70.08	65.86	63.37	67.27	57.81	63.72

These returns indicate much greater irregularities of temperature in 1885 than in 1884. While the past year shows a considerably higher mean for a single month than its predecessor, the monthly average for the growing season was over two degrees lower, and the aggregate temperature of the season 365° lower. The influence of these extremes was decidedly manifest in the history of the various crops—the coldness of April, May, and particularly June, retarding growth ; the sudden and excessive heat of July stimulating a too rapid maturity and exposing spring grains to the ravages of rust and insect pests ; and the comparative coolness, again, of August and September, arresting the process of ripening, and throwing back the period of harvesting. These conditions were almost the reverse of those of the previous year, which enjoyed a fairly high temperature in June, promoting an active growth, and a moderate temperature in July and August, causing a gradual and perfect maturity.

The following table gives the record of average precipitation for the same six months, in the four districts into which the Province has been divided :

RECORD OF PRECIPITATION.

Months.	West and S. W.		North and N. W.		Centre.		East and N. E.	
	1885.	1884.	1885.	1884.	1885.	1884.	1885.	1884.
	Inch.	Inch.	Inch.	Inch.	Inch.	Inch.	Inch.	Inch.
April	2.43	1.53	2.16	1.31	2.80	1.00	3.60	0.85
May	2.59	3.11	2.97	3.72	1.96	2.53	2.39	2.40
June	3.15	2.19	3.12	1.40	3.32	2.12	3.08	1.16
July	2.70	3.55	2.53	2.41	2.80	3.61	2.80	4.21
August	5.40	1.94	4.36	1.42	3.45	1.62	2.91	2.42
September	2.80	2.05	3.48	3.45	3.39	2.81	3.07	2.35
Totals	19.07	14.37	18.62	13.71	17.72	13.69	17.85	13.39

With the greater general humidity of 1885 than of 1884, these figures show a lighter rainfall in May, a very much heavier one in June, a lighter one again in July, and a very much heavier one in August, especially in the western, northern and central portions of the Province, than in the corresponding months of the previous year. The excessive moisture, accompanied by the low temperature of June, followed by the drought and heat of July, and the rainstorm in the beginning of August, account for the prevalence of rust and midge in spring wheat and oats ; and these vicissitudes, along with the heavy rainfall of the latter month, sufficiently reveal the causes of the potato rot and the discoloration of the barley crop, as well as, on the other hand, the luxuriance of the fall pastures.

The following table shows a comparison of the sunshine record of the last two years :

COMPARISON OF THE SUNSHINE RECORD FOR TWO YEARS.

Stations.	April.		May.		June.		July.		August.		September.		Totals.	
	1885.	1884.	1885.	1884.	1885.	1884.	1885.	1884.	1885.	1884.	1885.	1884.	1885.	1884.
	hrs.	hrs.	hrs.	hrs.	hrs.	hrs.	hrs.	hrs.	hrs.	hrs.	hrs.	hrs.	hrs.	hrs.
Windsor	164.6	167.7	189.4	196.0	278.9	256.6	298.9	247.1	183.3	250.1	215.1	198.7	1330.2	1316.2
Woodstock	176.2	157.2	201.2	170.7	271.8	265.8	280.8	248.4	163.4	261.0	195.9	211.5	1289.3	1317.6
Stratford	147.5	161.7	153.0	140.2	.....	289.8	.....	218.1	.....	183.3	.....	150.2	.....	1173.3
Toronto	206.7	166.0	228.3	209.3	291.0	320.4	316.8	246.9	219.8	281.1	240.6	214.2	1503.2	1437.9
Barrie	162.5	146.0	210.0	182.1	267.6	270.8	288.4	226.2	151.1	223.7	196.3	119.7	1275.9	1168.5
Lindsay	196.7	176.0	237.6	194.2	286.3	299.4	299.3	247.1	194.3	272.6	237.1	208.9	1451.3	1398.2
Kingston	186.9	140.6	235.1	173.8	276.0	239.5	294.0	191.1	204.4	290.2	230.1	228.8	1426.5	1264.0
Cornwall	220.0	146.1	281.4	178.3	250.7	299.7	280.2	184.6	226.7	259.1	234.7	188.7	1493.7	1256.5
Pembroke	120.2	137.3	208.6	185.9	216.2	272.3	241.6	166.6	168.6	248.4	147.0	145.8	1102.2	1156.3
Average for the Province	175.7	155.4	216.1	181.2	267.3	279.4	287.5	222.9	188.9	252.5	212.1	185.1	1347.6	1276.5
Sun above horizon	406.4		461.1		465.7		470.9		434.5		376.3		2614.9	

It is worthy of note that, along with a much heavier rainfall in the months under review in 1885 than in 1884, there was also a greater aggregate of sunshine by 71 hours; yet there was less sunshine in June and August than in the corresponding months of the previous year. Indeed, August, which under ordinary conditions has a maximum of sunshine, had less last year than any of the other months under comparison except April, while it had more rain by over 25 per cent. than any other month. Thus there were some curious irregularities in the season's weather.

FALL WHEAT.

The drought at seed time in 1884 made it difficult to get wheat land into a good state of tilth, especially in clayey soil, and growth at first was slow and uneven: but with a steady temperature and warm showers throughout part of September and the whole of October the plants pushed forward rapidly, and the reports made by correspondents of the Bureau at the beginning of November showed that the crop had then a very promising appearance in every part of the Province. Snow fell early and the winter was one of the longest, steadiest and coldest on record; yet the May reports of correspondents showed that the wheat was almost in as good condition on the first of April as on the first of November. Fortunately the rainfall during the winter was very slight, so that the snow did not pack on the ground as it often does; and, excepting in hollows and under heavy banks alongside the fences, no smothering effects were to be seen. But on the knolls and high ridges the snow was swept off, and in such situations the wheat was either killed outright or very seriously injured. The greatest apparent damage, however, was caused by the hard frost and northwest winds of April, and the low temperature of the first ten days of May; but the plants remained firmly rooted in all soils, and with favourably growing weather in the latter part of the month a good recovery was made. Excepting in some localities of Waterloo county where the wheat was killed by winter exposure, of Durham and Northumberland where it was drowned out by April floods, and of two or three counties on the St. Lawrence where it was smothered by the snow and hurt by spring frosts, no portion of the area in crop was ploughed up.

The August reports showed that generally within the principal fall wheat area of the Province—which comprises the whole of the central and the southern lake district—the crop was a good one, both in yield per acre and in quality of grain. On wet and poorly cultivated soils the early summer growth was generally retarded by spring frosts and cold weather; and this, with other influences of a more local character, such as storms, excess of rain or the want of it, and in some places the prevalence of hot blighting winds, was of sufficient extent to affect the general result. With these exceptions, fall wheat all through western Ontario came to the harvest a full and well ripened crop. The prospect was poorest in the northwestern part of the Province, particularly in the counties of Grey and Bruce, where the injury from winter killing and rust was considerable, and there the sample was generally shrunken and discoloured. There was an occasional appearance of rust all through western Ontario, especially on late and thin fields; but outside of the two counties mentioned it was not so general as to do serious injury. In the eastern part of the Province the area of fall wheat grown is comparatively small, and there was considerable loss from winter killing. Wherever the crop survived the effects of the winter, however, it grew and ripened well. In this portion of the Province there was an almost total immunity from rust, so that even the thinnest fields came to full perfection in point of plumpness and colour of grain.

Harvesting was several days later than usual, and excepting in some of the earlier counties in southwestern Ontario the bulk of the crop was still in shock on the 1st of August. A heavy storm of wind and rain set in on the 3rd of that month which retarded operations considerably all over the Province, but the storm was followed by cool and breezy weather, and the grain was housed in surprisingly good condition. There were a few complaints of sprouting, and also of the ravages of the weevil, but these were

limited to small areas, and from the November reports of correspondents it appeared that generally the grain was plump and marketable. Compared with 1884, the area total produce and average produce per acre were by county groups as follows :

Districts.	1885. Acres.	1885. Bush.	1884. Acres.	1884. Bush.	Bush. per acre. 1885.	Bush. per acre. 1884
Lake Erie	213,014	5,119,801	215,213	4,557,227	24.0	21.2
Lake Huron	133,205	3,351,758	140,623	3,188,194	25.2	22.7
Georgian Bay.....	77,385	1,824,335	71,883	1,796,351	23.6	25.0
West Midland	242,963	5,878,938	247,288	6,212,444	24.2	25.1
Lake Ontario	168,784	4,505,462	153,991	4,254,945	26.7	27.6
St. Lawrence & Ottawa	15,364	294,721	13,592	251,264	19.2	18.0
East Midland	24,097	496,628	22,085	455,810	20.6	20.6
Northern Districts	324	6,638	65	1,396	20.5	21.5
Total	875,136	21,478,281	864,740	20,717,631	24.5	24.0

LAKE ERIE COUNTIES.

Having successfully survived the winter and spring, excepting on some low-lying lands thinned by late frosts, the wheat fields of the Lake Erie counties enjoyed an incomparably auspicious summer for growth and development. Few complaints of injury from any cause have been reported. One or two hail storms visited some localities in Elgin and westward ; late or low lands suffered slightly from rust and midge ; the Hessian fly was at work, but not seriously, in Essex, Kent and Elgin ; and in the last named county the wire-worm did some damage, especially to the Egyptian variety : these are all the spots on the picture. The moderately cool and moist weather that generally prevailed throughout the growing season induced a strong, steady, healthy growth, remarkably free as a rule from defects of any kind ; the heads of the wheat were large and well filled, and the grain was plump, heavy and bright. The cool weather had the effect of postponing the harvest a week or ten days, but reaping began about the 20th of July—perhaps two or three days earlier in Essex and Kent. Good progress was made until about the beginning of August, when heavy rains set in and continued almost uninterruptedly for several days, compelling the farmers to suspend operations and leave a considerable proportion of their grain in the fields, standing, or in shock. The weather following the storm was cool and the remainder of the crop was housed unimpaired, otherwise than by a little shelling out. The area under crop, it will be observed, was less than for the previous year by 2,200 acres ; but with an increase in the average yield of nearly three bushels per acre, the product of the lesser area was greater by 562,574 bushels. The farmers of these counties speak in terms of high appreciation of their self-binders, which are rapidly coming into general use, and the circumstances of the harvest were just such as to show the advantage of a speedy work in the field.

LAKE HURON COUNTIES.

The reports for the counties bordering on Lake Huron vary considerably, but they indicate generally that the result is pretty much what might have been expected from the condition of wheat throughout this district as it came out of winter quarters. In the counties of Huron and Bruce there was serious injury from the frosts and cold weather of winter and spring, but in the county of Lambton the damage from this cause was comparatively slight. The returns are almost uniformly to the effect that a heavy crop, well ripened, plump in berry and bright in straw, was reaped in that county. A correspondent in Bosanquet says : "It is the heaviest crop we have harvested for years in this township ;" and "a good average," and "above the average," are the expressions used in many of the reports. The injury from rust was very slight, and occurred only in low, wet spots, or where the grain had lodged from too rank a growth. In the county of Huron the presence of rust was pretty general, only those fields escaping which had been sown early and were properly underdrained, and which had wholly escaped from winter killing. Here the injury from the last-named cause was much more severe than in the districts farther south ;

and where the vitality of the wheat plant was ever so slightly impaired from this or any of the other influences enumerated, it fell an easy prey to the attacks of rust. The same conditions existed in Bruce, only to a greater extent, because the crop there was more generally damaged by the winter frosts. An exception should be made in the case of the township of Eastnor, where the crop is reported as of good quality and wholly uninjured. Generally, in sheltered situations, or where from summer fallowing or other good cultivation the crop was vigorous and well advanced before winter set in, it maintained its condition throughout the season and a good yield was secured. It is also to be borne in mind that, as the yield in these northern counties is generally higher than in most other parts of the Province, a partial failure of the crop must be considered in a relative instead of a positive sense. The average yield of the group is .7 of a bushel more than the average for the Province; and although the area in crop is 7,458 acres less than in 1884, the product was 163,564 bushels more. In a few localities midge, weevil, or wire-worm made an appearance, but not in very great numbers, or to do any serious damage. General mention was made of the heavy storm of rain and wind of the 3rd of August, which retarded harvest operations considerably, and at that date nearly the whole of the crop was cut and standing in the field.

GEORGIAN BAY COUNTIES.

Throughout the Georgian Bay counties fall wheat, where injured by the winter frosts, never fully recovered, and its appearance at harvest was not generally satisfactory. This is especially true of the county of Grey, where a cold wet spring, followed by a partial drought in places, offered little encouragement or sustenance to the struggling crop. More than seventy-five per cent. of the reports from Grey state that the fall wheat fields grew up thin and patchy, and that in all such cases, as well as where the crop was late in maturing, it was struck with rust while the grain was in the milk. Wherever this occurred it ripened unevenly and prematurely, the sample was shrunken and of poor colour, and the yield was much reduced. Several districts in the interior of this county, however, send very encouraging reports, notably portions of the townships of Normanby, Egremont and Holland, where the crop was exceptionally good. A Normanby correspondent says: "It is the best crop we have had for years, both as to quantity and quality, and the greater part has been secured in splendid condition." A correspondent in Holland estimated that the early sown grain in his neighbourhood would yield forty bushels per acre. In Simcoe county the return was much better. Coming out in spring in fair condition, the wheat covered the ground with a vigorous growth which saved it from being materially affected by rust, and brought it to the harvest with few exceptions a full, bright and unusually heavy crop. Indeed the only unfavourable reports worth noting from this county come from places where the wheat made such a rank growth that it lodged, or was blown down by storms, some weeks before harvest, in which condition it was struck with rust and the grain was shrunken in consequence. In a few localities, on heavy clay soils, the wheat was prematurely damaged by the excessive rains and backward weather of spring, and as a general thing late sown or badly cultivated fields in all situations turned out poorly; but these were exceptions and would not materially affect the general result. It is worthy of note that Clawson wheat is mentioned as being the most liable to rust, while the Scott variety is remarkably free from it. There was an almost entire freedom from smut and insect pests. Cutting became general throughout the whole district in the last week of July, and was pretty well through with before the storm of the 3rd of August, but only a small proportion of the crop was housed at that time. In one or two cases sprouting in the shock was reported, but the cool dry weather which followed the rain saved it from material loss. In these counties the breadth sown was 5,500 acres more than in 1884, but the average yield was two and a half bushels less.

WEST MIDLAND COUNTIES.

The West Midland counties, extending from Middlesex to Dufferin, and embracing a wide area of different latitudes and altitudes, present rather varying accounts of the harvest. Middlesex reports, with a few exceptions, an abundant yield of excellent

grain—a more than average crop; and certain sections of other counties make an equally good return. Some large deductions, however, have to be made on account of a variety of influences which were at work, some in one locality and some in another. In April and May frost nipped the growing shoots, mainly in exposed spots, or in wet, heavy soil, and only a partial recovery was made, the effect being to leave the fields streaked and spotted, and to cause them to ripen unevenly. Hail, wind and rain storms in June beat down a number of fields in several counties, causing the grain to become lodged and tangled, and increasing the difficulty of reaping. Insect pests appear to have been comparatively innocuous. Midge slightly impaired the crop in the more westerly counties of the group, the Egyptian variety being the chief sufferer; the others, such as the Democrat, the Clawson and the Scott, escaped unharmed. It is true, a South Dumfries (Brant) correspondent reports "more midge than we have had for years," but this is a very exceptional case; the ravages of the pest have been infinitesimal in the aggregate. The most serious evil of the year has been rust, which affected the wheat fields more or less in all the counties. The universal report was, however, that the damage from this cause was almost wholly confined to low, undrained soils, or to late sown fields. As a rule, careful tilling and draining of the land, and seasonable sowing of the seed, have been rewarded with large and healthy crops. The August report of a Fullarton (Perth) correspondent may be truthfully applied to many cases: "Early sown extra good; late sown somewhat thin, spotted and rusted; but the sample, where properly sown, will generally be very good." Another correspondent in the same county, in Downie township, says: "The crop is good where care has been taken in putting in." Others attribute the rust to too rapid growth after the wheat was weakened by spring frosts; and a North Dumfries (Waterloo) correspondent makes this remark: "Considerable injury done by heavy rains and high winds, causing the wheat when heavy to lodge, hence a late ripening, and a consequence of this has been a good deal of rust." Taking the district as a whole, while the crop is inferior to the magnificent crop of the previous year, and to that extent a little disappointing to the farmers, it is but slightly under the average for the Province. It is fully double of the United States average for a series of years; and, with the few exceptions noted, in which the grain was slightly shrunken by the rust or midge, the bulk of it is a first-rate sample. The average yield was .9 of a bushel less than in 1874, and this together with an area in crop reduced by 4,325 acres lowered the aggregate product by 333,056 bushels. The date of cutting was a few days later than usual, owing to the general backwardness of the season. The farmers of the more southerly and westerly sections were first in the field, though rarely before the 20th of July; in most cases the reaper was not at work until between the 25th of July and the 1st of August. At the latter date the work was scarcely more than half done, very little of the grain was housed, and the rainy weather which followed interposed a sudden check.

LAKE ONTARIO COUNTIES.

In the Lake Ontario district the extensive or successful growth of fall wheat is confined largely to the counties bordering on the western end of the lake; from the county of Ontario eastward it is so uncertain a cereal, and so liable to winter-killing, that except on a few specially favoured farms it occupies only a secondary place. More or less over the whole group the severity of the winter was rather trying to the crop. On light sandy soil in the immediate vicinity of the lake, where there was only a slight snowfall, considerable quantities of the wheat succumbed to frost, the fields being left thin and patchy. Throughout the greater part of the fall wheat producing counties of the group—as Lincoln, Wentworth, Halton, Peel and York—the correspondents concur in describing the yield as a high average of bright, hard, healthy grain—not quite so plump as the extraordinarily fine product of 1884, yet an excellent sample. A Nelson township (Halton) correspondent thus accounts for the shrinkage: "The hot weather ripened the wheat too rapidly at last, and it is not so plump and bright as it was last year." A correspondent from Esquesing township, in the same county, reports: "A heavy crop on land either naturally or artificially drained; on low lands it is light and the grain poor." There were some traces of rust, but it appeared too late to seriously affect the great bulk

of the crop ; its chief attacks were made upon the later ripening fields, or upon the few in which the wheat was left weakened by the ravages of frost and failed to recover. Of insect pests of any kind there was scarcely a single mention in the reports. In this district, as in other parts of the Province, the season was some eight or ten days later than usual, harvesting generally beginning about the 25th of July—in a few instances only as early as the 20th. The work was rendered difficult in several instances by rain and wind storms (especially in Halton and Wentworth) beating down the rank growing grain and causing it to lodge, and operations were interfered with by the heavy rain of the 3rd and 4th of August. It is to be noted that the average yield per acre in these counties for the last two harvests is higher than in any other district of the Province. In 1884 it was 27.6 bushels per acre, and no doubt this good result induced farmers to increase the area in crop last year. That increase was 14,793 acres, or nearly ten per cent., and with an average yield of 26.7 bushels per acre the crop was 4,505,462 bushels, or nearly one-fifth of the entire crop of the Province.

ST. LAWRENCE AND OTTAWA COUNTIES.

There is very little fall wheat sown throughout the St. Lawrence and Ottawa counties—scarcely two per cent. in area and not one and a half per cent. in product of the whole crop—and even that little was considerably reduced last year by winter-killing and unfavourable spring weather, which necessitated ploughing up a great many fields and re-sowing them with spring grain. Wherever the crop was uninjured by the winter it turned out well, and in many cases where, owing to the land having been seeded to grass along with the wheat, the crop was left to take its course, it recovered wonderfully and presented a fair appearance at harvest. Contrary to the experience in the western parts of the Province with partially killed wheat fields, there was practically no rust in the east, and the grain ripened plump and bright. What there was of wheat to harvest in this district, therefore, was of good quality, though the acreage was small and the yield generally light. The best crops were obtained in the western part of this group, in the counties of Lennox and Addington, Frontenac and Leeds, and it was there that the largest acreage was sown and harvested. In some localities in these counties there was considerable loss from the wheat attaining too rank a growth, and being blown down and permanently injured by summer storms some time before the harvest. The heavy storm of wind and rain of August 3rd came just as cutting was fairly started, and occasioned further damage. Towards the east and north, along the Ottawa river, the acreage was so small as to be hardly appreciable, the experience of farmers in these districts being for many years past that fall wheat has been too precarious a crop to warrant its general cultivation, owing to the severity of the winter frosts and the greater exposure of the plants during winter as the country has become cleared of the forest. No insect enemies are reported.

EAST MIDLAND COUNTIES.

In a few localities, and principally in Hastings and Victoria, there was injury from winter frost and heavy snows, which left the fields slightly thin in places ; but this was not followed by rust or blight of any sort, so that even the lightest crops were with few exceptions of good quality and ripened to perfection. In the few cases where, on low or heavy lands, the wheat was struck with rust, it was not so severe as to cause any material damage. In Haliburton, the most northerly portion of this group, not much fall wheat was grown, yet what there was promised well. But the majority of the reports from all parts of the district indicate that the crop was quite up to, and in many cases above the average. A Hastings correspondent says, "It is the best crop we have had in a number of years." The general tenor of the reports was, perhaps, best expressed by a correspondent from Peterborough in these words : "A good crop ; not remarkably heavy, but of good quality ; somewhat thinned out by winter frost, but not injured in any other way." Reaping had generally begun through this district at the beginning of August, but little grain was housed before the rain storm, which caused considerable damage and retarded harvesting operations. The statistics show that the breadth sown was 2,000 acres more than in 1884, but the average yield was the same for both years.

THE NORTHERN DISTRICTS.

What little fall wheat is cultivated in the northern districts of the Province appears to have done fairly well last year. A Monck township (Muskoka) correspondent reports thirty bushels to the acre on heavy clay soil. In these high latitudes, however, it is a hazardous crop. A Morrison township correspondent says: "Fall wheat has often been tried, but generally fails. I had myself one crop out of three times trying, and gave it up." A McLean correspondent reports: "Two parties last fall sowed each five acres; in one case the wheat was damaged by last spring's frost; in the other it looks well."

FROM THE MAY REPORT. (MAY 15.)

George Leak, Rochester, Essex: The wheat is good, but not so good as it promised when the snow went off. It is very good on heavy clay soils, but considerable of the land in this township is of a mucky nature, and on such soil the April frosts did a good deal of harm.

T F. Kane, Maidstone, Essex: I see very few good fields of wheat, and they are on heavy land which was well manured, or on clover soil. On light loamy soil there will not be more than half a crop.

John Warnock, West Tilbury, Essex: Looks fair after the winter, but damaged a little by spring frosts. Good on heavy clay, but damaged by worms and frost on light ground.

N. A. Coste, Malden, Essex: The general condition of fall wheat is good; it does not seem to have been injured by snow, ice or rain. The late frosts have done a little harm in high places, where it seems to be dried up. Warm rains are much needed to bring it out.

John Buckland, Gosfield, Essex: Wheat wintered well, the best that it has for some years; it is best on the clay and gravelly soils. Frost on the 3rd of May injured it badly, but I think if we have favourable weather it will recover.

John Hooker, Mersea, Essex: Very good on clay and gravel; not so good on sand. The frost of 15th of April did a good deal of damage on light soils. No damage by worms or insects, and none ploughed up.

William McCormick, Pelee Island, Essex: Wheat is generally good in this township; some slightly damaged by frost.

W. C. Fletcher, Tilbury East, Kent: Wheat above an average; best on clay or loamy soil; slightly injured by frost after a thaw in winter.

James Macfarlane, Dover, Kent: Very good, but best on clay soils. Slightly injured in a few localities not sheltered by wind-breaks of bush.

Thomas Bateman, Chatham, Kent: Wheat is in fair condition, but very backward. It came through the winter in good condition, but has not improved much since, until the last few days.

A. J. C. Shaw, Camden, Kent: Very fair and promising equal to last year; best on clay soil.

L. E. Vogler, Zone, Kent: The general condition of wheat is good, but on low heavy soils it has been somewhat injured by ice and the cold backward spring.

Thomas Scane, Howard, Kent: Very fair, but light on heavy clay soil; injured in spots by ice. The wire worm did some injury last fall.

John Bishop, Orford, Kent: good on gravel and on drained lands, but poor on stubble and undrained lands.

D. McKillop, Aldboro', Elgin: On light land wheat has been affected since about the 10th ult. to the extent of ten per cent. by the frost. I never saw wheat look better when the snow disappeared.

Dugald Campbell, Dunwich, Essex: Wheat looks promising, but best on clay loam.

Jabel Robinson, Southwold, Elgin: Fall wheat is improving; looks best on heavy clay soil, but not so good on loam and sand. It was injured last fall somewhat by wire worms.

James Davidson, Yarmouth, Elgin: The wheat is very good, but not near so good as when the snow left. Then, I suppose it looked the best ever seen at that season, but the long, cold spring, with so much north-west winds, has reduced it at least fifteen per cent.

Charles Chute, Bayham, Elgin: The wheat looked fine when snow left the last of March, but the cold raw winds and freezing at night have told on the late sown and poorly put in; as a whole it is looking well, and best on loamy and gravelly soils.

W. McCredie, South Dorchester, Elgin: Wheat is looking excellent, especially on our clay loam.

W. Watts, Bayham, Elgin: Fall wheat looks favourable on sandy or light soils, but not so well on heavy or clayey soil.

Robert Garnham, Houghton, Norfolk: On sandy loam the wheat is very promising at present, but on low and flat land it is badly killed.

George Cruise, Walsingham, Norfolk: On soils that are not too wet the wheat seldom looked better at this season, but on wet places the plant is quite weak, although generally alive.

John Ostrander, Middleton, Norfolk: Fall wheat is good on all soils; slight injury by winter or other causes.

L. N. Collver, Townsend, Norfolk: On all our different soils wheat is excellent. Some sown too early was hurt by insects, but very little.

James McKnight, Windham, Norfolk: Very fine prospect for wheat at present; not much difference as to soils, except on cold lands.

Robert Jepson, Walpole, Haldimand: Wheat is making very slow growth, and from present appearance it cannot be a full crop. Some fields are looking well, while others on low, mucky soil have been severely injured, and a few have been ploughed up.

V. Honsberger, South Cayuga, Haldimand: Wheat is fair on sheltered fields; wherever exposed it is badly killed by frost.

Wm. Chalmers, Sherbrooke, Haldimand: Wheat is not so good as was anticipated six weeks ago; a good deal of injury has been done by ice and spring frost.

J. R. Martin, North Cayuga, Haldimand: Wheat is generally good; it is best on dry clay uplands.

J. H. Houser, Canborough, Haldimand: Wheat is very poor; best on clay soil.

Wm. Mussen, Oneida, Haldimand: Condition of fall wheat, fair. It was injured by frost after the snow went off.

F. A. Nelles, Seneca, Haldimand: Wheat has the appearance of being an average crop; high lands have been somewhat damaged by frost, high winds and drought.

John Misener, Wainfleet, Welland: Wheat is in a fair condition on all soils. The best worked fallows that were finely pulverized suffered a good deal from snow in March, but the damage is not great.

E. W. Fares, Humberstone, Welland: The general condition of wheat is good; a slight injury has been caused by spring frost, but none has been ploughed up.

J. J. Sherk, Bertie, Welland: Wheat in this locality is not very good, having been considerably damaged by snow and ice; that which had a heavy top last fall seems to be injured the most. The weather through the month of April was unfavourable, but it is now improving.

E. A. Dickout, Bertie, Welland: The condition of wheat generally in this locality is such that unless a favourable change takes place the yield will not be up to the average. The damage has been done during the last three weeks from frost.

S. H. Van Every, Pelham, Welland: Wheat is very good on sandy land, but not so good on loam or clay, where it is slightly damaged by frost.

John McIntyre, Crowland, Welland: Wheat is pretty good; but it does not look as well as when spring opened; injured some by cold rain and frost.

H. M. Beam, Willoughby, Welland: The general condition of wheat is only ordinary. It was injured on high lands by cold dry winds in the latter part of April.

Wm. Parker, Stamford, Welland: Some fields are a good deal spotted, being injured by ice and frost where water stood on it. It is better on clay than sandy soil, owing to the clay land being better drained.

John Grant, Sombra, Lambton: Wheat looked well when the snow went off; but the dry cold weather of the latter half of April and first week in May has prevented any actual growth. The late rains and warm weather will recover it.

Charles Gale, Sombra, Lambton: Wheat looks well on clay land, but poor on light soil.

Joseph H. Patterson, Dawn, Lambton: Some fields look well while others are very patchy. On rich well drained land wheat stood the winter well, while on new wet land it is badly injured; none ploughed up.

Wm. Mowbray, Moore, Lambton: Wheat is in excellent condition on every kind of soil.

Robert Montgomery, Enniskillen, Lambton: Wheat is in good condition generally; it is best on clay loam. A slight injury was caused by spring frosts, but there are better prospects of a good crop than for many years.

Arch. McIntyre, Brooke, Lambton: Scarcely up to the average on wet soils or stubble land; but on well prepared and properly drained summer fallows the prospects are good.

J. R. Smith, Plympton, Lambton: Wheat is generally good, but best on gravel soils. Should the present warm weather continue we may expect an abundant crop.

J. Dallas, Bosanquet, Lambton: Wheat is in very fair condition on the various soils, and there are prospects of a good crop.

Robert Rae, Bosanquet, Lambton: Wheat is in fair condition, but is rather best on light soils.

D. S. Stuart, Hay, Huron: The condition of wheat in this locality is generally good on all kinds of soil. It has not been damaged in any way, and the crop prospect is good.

N. Robson, Hullet, Huron: Fall wheat is good on all kinds of soil.

James Armstrong, Stanley, Huron: Wheat looks well on clay land, but towards Lake Huron, where the land is lighter, it is not quite so good.

G. E. Cresswell, Tuckersmith, Huron: The fall wheat never came through the winter in better condition, but the cold and frost of the latter part of April and beginning of May have caused the young plant on soils that are not well drained or manured to look feeble and sickly. The fine warm weather of the past week has however caused a vast improvement, and should the present favourable weather continue we may look for a fine crop.

Hugh Robb, Tuckersmith, Huron: The condition is very good generally: rather best on loamy soil.

Walter Hick, Goderich, Huron: Wheat wintered well, and where it has been sown on good land it looks well. In some places it was smothered along the fences, but the damage is very slight.

John Beattie, McKillop, Huron: Fall wheat is pretty good on all soils; it was slightly injured along the fences by heavy snow drifts, but the damage is very little.

William Young, Colborne, Huron: Fall wheat is very good, but best on light soils; no damage from any cause.

John Varcoe, Colborne, Huron: Wheat is very good on all kinds of soil this year.

George Hood, Morris, Huron: Wheat is good; it looks best on light soils, but has been a little killed along the fences where the snow lay heavy and late.

John Anderson, East Wawanosh, Huron: Where wheat was sown early on light, well drained land it looks well: some killed out along the fences, where the snow laid on it heavy and late.

Malcolm McDonald, West Wawanosh, Huron: Wheat is poor on hilly farms. The snow laid until late in April, and the weather has been cold and wet until this week.

A. Drummond, Howick, Huron: Fall wheat looks very fair; it is best on rich soil with an open bottom; no winter killing except under heavy snow drifts.

E. Cooper, Howick, Huron: The general condition of wheat is good; on well drained lands it is extra good.

Peter Clark, Culross, Bruce: On high and well cultivated land, early sown fall wheat looks very well: on low land, undrained, and late sowing, it is poor, winter-killed and sickly looking.

Thomas Walsh, Huron, Bruce: The fields are very bare for this time of the year; some of the best fields have been absolutely frozen to death in the exposed parts. In passing over the country I see the crop does not appear to hold the important position either in quantity or quality it did in previous years.

James Johnston, Carrick, Bruce: The fall wheat here will be about three-fourths of a full crop. Where the snow did not lay in drifts and the ground was dry, the wheat is good; on low, wet land, and where deep drifts laid, wheat is smothered or rotted.

A. S. Campbell, Kincardine, Bruce: Wheat has stood the winter well. On level, loamy soils, well drained, it has a strong, healthy appearance, but on high, stiff clay knolls or hills it is badly killed.

Daniel Sullivan, Brant, Bruce: Fall wheat came through the winter remarkably well, hardly any being killed except where snow drifts laid heavily on it by the fences. The continued cold weather, however, has given it a great set back, which it may recover when more genial weather comes, but it is very doubtful.

Hugh Murray, Bruce, Bruce: The fall wheat generally has come well through the winter. Although the winter has been remarkably severe, the cold was steady and the fields were well covered; when the thaw did come there were no alterations of warm days and frosty nights to cause injury.

Robert B. Fleming, Saugeen, Bruce: In general it is badly smothered out by the heavy snow drifts around the fences, hollows, and sheltered places, and there is a good deal killed out where the ground was bare during the severe frost. Take it all over we cannot at present look for more than half a crop.

Wm. Woodman, Amabel, Bruce: Not much grown in this section since the failure of two years ago; what I have seen is very spotted, being smothered in the low places and where the heavy snow drifts laid. I believe this applies to all soils alike.

M. J. Norris, Eastnor, Bruce: The fall wheat in this locality is good and does not seem to be injured by the snows or frosts, or infected by any worms or insects.

James Shearer, Egremont, Grey: There is here and there a moderately good field of fall wheat to be seen, but the general appearance is very patchy. Where the snow laid deep it is scalded out, and where blown bare it was frozen or perished when spring opened.

Joseph McArdle, Proton, Grey: There is not much fall wheat sown in this township, but the best is on light loamy land. It has the appearance of being over an average crop.

Wm. Irvine, Bentinck, Grey: Where not winter killed it is vigorous and looking well, but many fields are very patchy, as the heavy snow drifts crusted towards the end of March and through April, consequently much of it was smothered out. What remains is picking up well with the present warm weather. The lands most exposed to the western winds are best, as the snow was almost off them before the crust formed.

George Binnie, Glenelg, Grey: Fall wheat has come through the winter in good condition. There seems to be no difference on the various soils. It is slightly injured around fences and spots where snow laid long.

Thomas Kells, Artemesia, Grey: Wheat bids fair for an average crop, but growth is backward. On all kinds of soils it is good except where the snow drifted on in the winter and laid long in the spring.

Wm. Milne, Osprey, Grey: There is very little fall wheat in this township; what there is appears to be uninjured by snow or frost. The season seems to suit it remarkably well.

John Cameron, Holland, Grey: The condition of wheat is good, especially on light or gravelly soil; on heavy clay it is not so good, a great deal of it being heaved out of the ground.

George Clark, Euphrasia, Grey: The fall wheat has passed through the winter very nicely, but the cold and wet weather of April and May has done considerable damage; how much, it is just now hard to say.

James Latter, Collingwood, Grey: Not a great deal sown, but it has come through the winter well on all soils; in places near the fences it has been injured by heavy snow, which wire fences would prevent.

Alex. Garvin, Derby, Grey: Most of the fall wheat is good; a few fields have been injured by the snow.

Joseph M. Rogers, Sydenham, Grey: The appearance of fall wheat in this locality is promising, but best on loamy soils: on black, mucky and new land it was somewhat heaved by frosts in April, while on high and well drained land it is in good condition.

Wm. H. Free, St. Vincent, Grey: Fall wheat is in very good condition, although it has not made much growth this spring yet.

W. Totten, Keppel, Grey: Wheat has generally wintered well, but some was smothered owing to snow being too deep; heavy clay seems to have done best.

Robert Lawrence, West Gwillimbury, Simcoe: Wheat appears first-class: I think it shows better than any other season in my remembrance.

Thomas G. Smith, Tossorontio, Simcoe: Fall wheat looks remarkably well on all kinds of land.

George Cowan, Innisfil, Simcoe: Fall wheat never came out in the spring better than this season; it looked very well. The month of May has been hard on some land where the wheat was late and the land springy; a few fields look bad, but as a general thing it has the best appearance for years.

Michael Coyle, Sunnidale, Simcoe: Fall wheat looks very poorly on account of the late, backward spring, hard frosts and too much rain.

Walter Scott, Nottawasaga, Simcoe: On light soils fall wheat looks the best; on clay it looks poorer; it is hurt a little by the late frosts and much rain.

George Sneath, Vespra, Simcoe: Wheat never came out better in this township than it has this spring, being good on all soils.

James Farney, Flos, Simcoe: The condition of fall wheat is healthy on heavy soils, but not so on light soils, as the snow has injured the wheat by being too warm.

James Ross, Oro, Simcoe: Fall wheat is looking very well, and is not winter-killed except some pieces near fences where the snow laid on it very late.

Jasper Martin, Medonte, Simcoe: Fall wheat looks very well on all soils in this neighbourhood, and is not injured to any extent.

Archibald Thompson, Orillia, Simcoe: Fall wheat looks well, especially on light soils; it has been injured slightly on heavy soils.

Benjamin Watterworth, Mosa Middlesex: Wheat is about an average crop, but looks best where land is thoroughly drained. Cold weather in the latter part of April and first of May did considerable damage, but none will have to be ploughed up.

Richard Coad, Ekfrid, Middlesex: Wheat is very good and an average breadth sown. I have never seen the plant come through the winter in finer trim; there has been very little damage by worms, and no fall wheat is likely to be ploughed up.

W. E. Sawyer, Caradoc, Middlesex: Wheat is good on sandy soil, but on low ground it has been injured to some extent.

James A. Glen, Westminster, Middlesex: Fall wheat is very good, but best on underdrained land it was slightly hurt by cold weather, but there will be none ploughed up. Altogether the wheat crop is very promising.

C. Greenaway, Adelaide, Middlesex: The general condition of wheat is extra good.

Joshua Irvine, Lobo, Middlesex: The wheat is excellent on sandy soil and underdrained land, but very poor on cold wet soil.

Peter Stewart, Williams West, Middlesex: Wheat is only in fair condition. The prospects were splendid when the snow left, but since then the frost and cold winds, with dry weather, have kept it back and killed a great deal of it.

N. McTaggart, Williams East, Middlesex: The condition of wheat is not as good as was expected when the snow went off. It stood the winter well, but the late cold spring has injured it to some extent.

James Fisher, London, Middlesex, Wheat is looking extra well in this locality.

W. D. Stanley, Biddulph, Middlesex: Wheat is looking better this spring than I have seen it for over forty years.

E. Jarvis, Oxford North, Oxford: Wheat is hardly up to an average; there was some slight damage done by frost.

Wm. Brown, Blenheim, Oxford: The wheat in this locality is first-class, and so far it has been injured by nothing.

James Anderson, Zorra East, Oxford: Wheat is fair; the principal injury has been by frosts and wet weather since April 10th.

John Wright, Oakland, Brant: Fall wheat is in good condition in this section.

Thomas A. Good, Brantford, Brant: Wheat is fair; it has been winter-killed on any light soil, and fully twenty per cent. on sandy soil has been killed by the extreme frost.

Daniel Burt, Dumfries South, Brant: Wheat is fair, but damaged slightly by snow and frost.

Robert Beatty, Blanshard, Perth: The general condition of fall wheat is good, the soil being uniform. In some places around the fences, where snow drifts were very deep, it is injured to some extent.

A. M. Druer, Blanshard, Perth: Wheat is good, but somewhat backward on badly drained lands. I do not know of any wheat ploughed up this spring.

John Frame, Downie, Perth: The general condition of fall wheat is very good, but it has an unhealthy colour on very heavy wet land.

James Crerar, North Easthope, Perth: Wheat never looked better; the plants are healthy and thick on high land.

George Leversage, Fullarton, Perth: Fall wheat looks remarkably well; some fields are a little backward in consequence of late sowing last fall. The crop is full and even, and I do not know of a single field that has to be ploughed up.

F. R. Hamilton, Hibbert, Perth: The fall wheat looked exceedingly well when the snow went away, but the cold wet weather has had an injurious effect on it. A good deal of the weak plants have died where the ground was wet, but where it is dry or under-drained, the crop is looking fine.

W. J. McLagan, Logan, Perth: Wheat is very good on land well manured and summer-fallowed, but the dry cold winds and frost in the beginning of May hurt it considerably. There is likely to be some ploughed up yet.

W. B. Freeborn, Mornington, Perth: Fall wheat in general is first-class on fallowed land. The soil throughout this township is chiefly heavy clay. Wheat sown on land on which pease were grown last year has suffered considerably from frosts and cold winds.

Duncan McFarlane, Puslinch, Wellington: On high and exposed places the wheat is considerably hurt, but where it is protected from the west and north winds it is very good.

Wm. Whitelaw, Guelph, Wellington: The general condition is good, but a little late on low, flat lands. On high and exposed lands it has been injured considerably by severe frosts.

Charles Nicklin, Pilkington, Wellington: Wheat is about the same on all soils. It was injured some by the frosts in April, and some complained of worms in the fall where wheat was sown on stubble land, but on the whole it has not looked better for some years.

John Black, Eramosa, Wellington: Wheat is very good, but rather the best on low land. Some was injured by frost, but only on high or exposed fields. A little has been ploughed up, but to no great extent.

James Cross, Peel, Wellington: Wheat is very fair considering the late season. On heavy clay soil it stood the winter well. It appears to me to have received more injury from the frost last fall than this spring.

Robert A. Reed, Erin, Wellington: Wheat is poor on low and wet soil, but where the land is well manured it is very good. It has not been injured to any extent by snow or frosts.

John Strang, West Garafraxa, Wellington: When the snow went away the wheat looked well, but the cold, wet spring has kept it back. I think it will be all right yet.

James Connell, Minto, Wellington: Wheat stood the winter well. On gravel bottom and drained land it is very good, but on clay bottom and wet land it is very poor.

R. Rennelson, Dumfries, Waterloo: Fall wheat looked well when the snow went away, but it soon appeared that the higher parts of wheat ground had suffered from the very severe frosts of early winter. A few fields in this locality have been almost entirely ploughed up.

Henry Liersch, Wilmot, Waterloo: Fall wheat is very good, but hurt a little by the frost.

S. B. Snider, Waterloo, Waterloo: Wheat is fair; injured some by the frost on high ground; portions have been ploughed up where the lands are very hilly.

George Bellinger, Wellesley and Easthope, Waterloo: The general condition is very good except on hilly land, but on well cultivated and drained land it looks extra good.

J. B. Snider, Woolwich, Waterloo: Wheat is very fair on all soils; if any difference it is best on low land.

Hugh McDougall, East Luther, Dufferin: Fall wheat is good. The soil does not seem to have effected it as much as usual. Snow smothered it where drifts were deep along fences, but to no great extent.

David Spence, Amaranth, Dufferin: Wheat is good on all kinds of soil here, and I cannot discover any injury whatever. All fields look well and healthy, but very late.

John Polley, Melancthon, Dufferin: Wheat is above the average. That which was late sown is injured the most, and a small quantity is likely to be ploughed up.

John H. Lindebury, Gainsborough, Lincoln: Fall wheat appears very good and even on the ground, not being injured to any extent by rain, snow or frost. I do not remember ever seeing the wheat look better at this time of the year, although it may have been larger.

Adam Spears, Caistor, Lincoln: Wheat looks well, with fine close top, and generally equal on all soils, as the clay is similar through here. On fields where the snow was blown off the frost killed the top; this will throw back such crops from an average.

James Oill, South Grimsby, Lincoln: Fall wheat is good in this locality, equally as good as last spring at this time; very slightly injured by the winter and spring frosts.

George Walker, Clinton, Lincoln: The general condition is good, especially on clay soils, but considerably injured along the lake by the snow drifting off. In the rest of the township it is very good.

John Secord, Grantham, Lincoln: The general condition of fall wheat is poor. The sandy soil is rather least affected by snow; where it has been well covered with snow it has come out all right.

Alex. Servos, Niagara, Lincoln: One month ago the wheat promised well, not appearing to be injured by the winter. At this date it is not looking so well; the frost at nights seems to affect it.

W. M. Calder, Glanford, Wentworth: When the snow disappeared the wheat looked remarkably well. The cold weather since seemed to put it back and I think it has killed some, but with a few exceptions that which I have noticed is in good condition. This applies to clay and clay loam. It is generally better on the sandy soil than on the others.

W. G. Fletcher, Binbrook, Wentworth: Wheat is very good—better on black loam than on heavy clay. It has been injured some by snow, a little by ice, and in some parts a good deal by the cold, dry weather in the latter part of April and first of May.

Erland Lee, Saltfleet, Wentworth: Generally extra good; best on sandy soil; injured only by the frost on unsheltered places.

John Ireland, Ancaster, Wentworth: I estimate it injured to the extent of twenty per cent., the

principal cause being the cold, backward weather after the snow left the ground. On light soils it is most damaged, especially fields lying high or exposed to the north. No injury by snow, and very trifling by ice. None of the wheat plant has been heaved by frost so far as I have seen, whether upon high or low ground.

George Allison East Flamboro' Wentworth: Fall wheat never looked better.

Daniel McLaren, Nelson, Halton: Fall wheat is looking fairly well, but has been greatly damaged by April frosts.

R. Postans, Trafalgar, Halton: Fall wheat is looking very fine here—part in clay and part in sand and gravel. The clay part looks the best, as snow and ice sheets injured some in the low spots, but I think very little has been injured from any cause the past season.

William McDonald, Esquesing, Halton: Fall wheat on the whole is in a splendid condition—the only exception being high hills where the snow was blown off, leaving it exposed to the severe frosts of winter; and that may not be so bad as it looks, since the roots may be sound though the tops are withered.

John Campbell, Chinguacousy, Peel: Wheat has not looked better for the last six years in this township; it has a splendid appearance now—good top and healthy looking.

William Porter, Toronto Gore, Peel: Wheat came out in the spring in excellent condition, but has been kept back to some extent by the cold and wet weather—perhaps a week or ten days later than usual. It appears equally good on all soils.

W. T. Pattullo, Caledon, Peel: The wheat will prove to be an average crop if nothing intervenes to prevent it before harvesting. On gravelly soils it is very good; on low-lying lands it suffered somewhat with the late frosts and general want of vegetation.

Henry Duncan, York, York: There are some very good fields; others are considerably injured by the frosts on rolling or exposed parts where the snow disappeared first; also where the land is naturally wet and not drained.

John Gibson, Markham, York: Fall wheat is rather late, but good; it is mostly healthy looking.

John Beasley, King, York: It looks well, but some knolls have been killed by cold winds. I have never seen it look better on low lands than it does this year.

J. Bartholomew, Whitchurch, York: Fall wheat looks pretty well in general; some low fields have been injured by so much rain and cold weather since the snow went off.

Joseph D. Davidson, North Gwillimbury, York: The most of the wheat that is killed appears to be on the highest land. That which is inclined to be gravelly appears to fare the worst. Some fields of this nature, which in other years came through the safest, are the most hurt this year. When the snow went away the wheat presented the finest appearance I have ever seen; but the warm weather coming so soon after the departure of the snow caused the wheat to start, which being followed by so much cold and frost caused a great deal of damage—probably 20 per cent.

James McBrien, West Whitby, Ontario: What is not killed out, looks fair. It appears to vary with the position of the land, the slope, etc.

William Smith, East Whitby, Ontario: Not a great deal sown here, but what there is appears good, with little difference on the various soils.

Henry Glendinning, Brock, Ontario: It looks good wherever sheltered on all soils that are dry. The wheat is first-class, only on exposed places where the snow was blown off, and there it has been killed.

George Smith, sr., Thorah, Ontario: The condition of the fall wheat is excellent on all soils.

Joseph McGrath, Mara, Ontario: Fall wheat looked very well when the snow went off, but we have had pretty heavy frosts since, and it is beginning to look a little delicate. It looks better on clay soils.

John Foott, Hope, Durham: The fall wheat is very much injured, and on low, undrained land it is completely killed, a good deal being ploughed up and sown to spring crop.

James Parr, Cartwright, Durham: Very little wheat sown in this township. I only know of one field within a radius of five miles, and this is considerably winter-killed, probably by frost.

John Williams, Hamilton, Northumberland: Very little sown, but what there is seems in a fair average condition. Perhaps about one-fourth was destroyed by the late frosts.

George Sanderson, Cramahe, Northumberland: Fall wheat is badly killed in this section. I think the thaw in January killed a great deal of it here, as where the snow did not go all off the wheat is not killed, and some spots covered with water this spring are all dead. None ploughed up, but some are sowing spring wheat on the killed spots.

G. F. Brisbin, Alnwick, Northumberland: Fall wheat looked well till the first of May, but it has been injured by the frosts and so much wet weather.

R. P. Hurlburt, Percy, Northumberland: a fair average; it looks the best on loamy soil and high ground. Some spots appear slightly injured by the depth of snow.

Andrew M. Hait, Hallowell, Prince Edward: The condition of fall wheat is good on all kinds of soils; it has been injured very little.

A. J. File, M.D., Ameliasburg, Prince Edward: The condition of fall wheat is only fair; there was very little sown, and that little was considerably injured, some fields being ploughed up.

Samuel N. Smith, Sophiasburg, Prince Edward: Only a small acreage sown; but this appears excellent, the best for years; it is good on all soils, except low and wet land not well drained.

John Sharp, Ernestown, Lennox: Very little fall wheat is sown here, but what there is looks well. It was slightly damaged by snow and ice, but none has been ploughed up.

George Lott, Richmond, Lennox: Wheat is looking fairly well, but there is very little sown here.

J. B. Aylesworth, Camden East, Lennox: Fall wheat is very good—best on high loamy soils, but slightly winter-killed on clay soils.

Joshua Knight, Storrington, Frontenac: The winter has been favourable for fall wheat, and it looks well; it is best on clay loam.

John Elkington, Palmerston and North and South Canonto, Frontenac: Very little fall wheat is sown in these townships; what there is has wintered well, being protected by snow until the 24th of April.

Wm. A. Webster, Lansdowne, Leeds: Wheat is very good; the soil is all clay here.

Andrew Gray, South Crosby, Leeds: About one-half of the fall wheat has been destroyed here by excessive wet weather.

Alex. Thomson, Yonge, Leeds; Fall wheat never looked better in this section; all we want now is warm weather.

Gideon Fairbairn, Edwardsburg, Grenville: Wheat looks well on the various soils, but not much sown here; 102½ acres returned on assessment roll against 239½ last year.

Alex. Buchannan, South Gower, Grenville: Wheat looks very fair, but is best on heavy soils; slightly injured by frost, but none ploughed up.

G. D. Dixon, Matilda, Dundas: Fall wheat is almost a total failure here owing to the deep snow.

E. L. White, Winchester, Dundas: Wheat is very bad; best on clay loam; a great deal of it will be ploughed up in this section.

R Anderson, Cornwall, Stormont: The condition of wheat is not favourable. It was badly injured by frost in April and May.

Thomas McDonell, Charlottenburgh, Glengarry: About one-third of the fall wheat will be ploughed up.

A. M. Campbell, Kenyon, Glengarry: Fall wheat may be about half a crop; it is badly winter-killed. None will be ploughed up, as fall wheat land here is all seeded for hay and allowed to remain.

D. B. McMillan, Lochiel, Glengarry: The condition is fair, but there is very little fall wheat sown here.

W. J. Summerby, Russell, Russell: Snow and water have killed about one-third of the wheat, but there was so little sown that it does not affect the general crop report.

P. R. McDonald, Osgoode, Carleton: Wheat looks fair; it is good on clay and gravelly soils, but was injured some by frost in January.

Thomas G. Somerville, Fitzroy, Carleton: Fall wheat is very poor; about one-half will be ploughed up.

Isaac Wilson, March, Carleton: Wheat has wintered well in this locality; better than for some years. There is not much sown.

A. Taylor, Bagot, Renfrew: Very little fall wheat is sown in this county; what there is was injured by frost in January.

A. Smallfield, Horton, Renfrew: Wheat is good on new land, but a failure on old land; some will be ploughed up.

John Gibson, Bathurst, Lanark: Wheat has wintered well on all kinds of soil. The cold late spring has damaged it to some extent on low undrained lands.

Wm. McGarry, Drummond, Lanark: Wheat wintered well; low places are now suffering from water, but there will not be much ploughed up.

William Ramsey, Mariposa, Victoria: Fall wheat in general is looking very well. I have not heard of any being winter-killed or injured by snow.

W. Sullivan, Emily, Victoria: In very poor condition generally, but on flat, sheltered land, it is good: badly killed by frosts in exposed lots, supposed to be in January after a heavy thaw.

A. Howkins, Eldon, Victoria: Very good, and I noticed where sown on soil of second ploughing it is by far the best. In fact the fall wheat has not looked better for several years.

Nelson Heaslip, Bexley, Victoria: Fall wheat has come out in good condition, but was injured a trifle by ice, say about five per cent.

John Bailey, Laxton, Victoria: Fall wheat is good on all soils, not being injured any by snow or ice, but it has grown very little yet, the season being so backward.

William Cookman, Somerville, Victoria: The fall wheat generally is in fair condition. There are some fields that look bare, but the roots seem to be all right, and with such weather as we are having at present it will show well in a few days.

Dawson Kennedy, Otonabee, Peterboro': On the whole it is rather poor; on light, porous soils fair, but on clayey soil a failure. The want of snow in the early winter, and the cold, late spring, is the cause of injury to fall wheat. There is likely to be considerable wheat land resown this spring.

J. M. Drummond, Otonabee, Peterboro': When the snow went off the fall wheat was very good and entirely free from all injury, but for the last three weeks, owing to stormy, wet and cold weather, it has been going back every day, so that now many fields look brown and patchy; wet, heavy clay soils are the worst.

James Tindle, Smith, Peterboro': About one-half killed by freezing altogether; the snow being blown off exposed it to intense frosts. The low lands seem to be the best.

Porter Preston, Belmont, Peterboro': Fall wheat is in good condition when sown early; the late sown is not so good. It looks best on heavy soils, and is not much winter-killed.

Daniel Williams, Glamorgan, Haliburton: Wheat has been almost completely killed by frost; the high lands facing north-west look best. The present prospects are that at least nine-tenths will be ploughed up

John Johnson, Thurlow, Hastings: There was not much fall wheat sown, but it looks well; on low lands it is slightly injured.

J. C. Hanley, Tyendinaga, Hastings: About half of it is winter-killed, and the rest is very backward. It is best on dry, manured land. Ice and snow injured much around the fences and on flat lands.

J. R. Ketcheson, Madoc, Hastings: Fall wheat is generally good; a mixture of clay and loam land shows the best. Some fields are slightly injured by frost.

James McGregor, Wollaston, Hastings: Fall wheat is sown here only to a very limited extent, and appears badly winter-killed. The present appearances give promise of half a crop, which many prefer to ploughing it up.

Moses Davis, Morrison, Muskoka: Fall wheat is good, but best on loamy land. The weather has not injured it.

Stephen Brundidge, Ryde, Muskoka: There is but little sown in this locality, but what there is never looked better.

Charles Robertson, Cardwell, Muskoka: There is not much fall wheat sown here; but what there is appears in good condition. It is not very good in low-lying places, where the drainage is not properly attended to.

R. A. Lyon, Tehkummah, Algoma: Very little fall wheat sown, and it does not look well; it has been injured by the snow lying too long.

J. H. Johnston, Sandfield, Algoma: There is very little fall wheat sown in this township; what has been is injured by late frosts.

FROM THE AUGUST REPORT (AUG. 5.)

Robert Manery, Mersea, Essex: There is about ten per cent. of the fall wheat out yet on account of last week's rain. The weather being cool, I think it will not be hurt much.

Lawrence Tape, Orford, Kent: Fall wheat was hurt some by heavy rain and wind knocking it down before being filled.

C. Darling, Howard, Kent: The wheat crop is one of the best harvested for some years, and the berry is very plump and bright. The weather was very favourable to wheat filling, being very cool, but it had the effect of making the harvest a week or ten days later than usual.

Samuel MacColl, Dunwich, Elgin: The quality of fall wheat was never better, I helped to thresh some that yielded 48½ bushels per acre.

George Cruise, Walsingham, Norfolk: The fall wheat had fair play this year, and where it was properly put in last fall is an abundant crop, not being damaged by rain, hail, frost, rust, or insects to any great extent.

John A. Ramsden, Humberstone, Welland: I have five acres of a new variety of fall wheat that appears to be very hardy, and one bushel of seed is plenty to sow on an acre. I have not threshed yet, but I think it will turn out at least forty bushels per acre. The Boyer in the same field, with the same culture, will not yield over twenty-five bushels per acre, and it had a heavy coat of salt that the Martin's Amber did not have.

George M. Everest, Plympton, Lambton: Fall wheat has not been better for many years, and will yield an average of twenty-five bushels to the acre. Some expect to get as high as forty-five bushels to the acre.

B. B. Smart, Sarnia, Lambton: Fall wheat is a good crop, considering the time most of it was got in last fall. Some that looked backward in early spring picked up wonderfully and is a good crop.

John Rudd, Goderich, Huron: The rust affected the late-sown wheat badly, while it did not injure what was sown early.

B. P. Mitchell, Howick, Huron: Owing to winter killing, which arises from lack of drainage, there are green spots struck out with rust.

G. Edwin Cresswell, Tuckersmith: A month ago the promise of the fall wheat crop was excellent; in fact, it looked as if the crop of '85 would be the largest for several years. The rust has, however, dashed aside all the fair promise, and a reduction of one-fourth or one-third will have to be made in the estimate.

Henry Doupe, Usborne, Huron: The fall wheat is all cut down and shocked, but a very small portion of it is secured. The weather changed on Sunday night, and a good many of the shocks were tumbled down. Monday and Tuesday were two wet days. The wind changed to the north on Wednesday. If the remainder of the week keeps fine, the fall wheat will be secured.

Edwin Gaunt, West Wawanosh, Huron: Fall wheat is proving a very good crop, despite the unfavourable prospects earlier in the season. In many places it is a little patchy and has not ripened very regularly, owing to winter-killing. What is later is badly rusted.

Thomas Wilson, Huron, Bruce: Any patches injured by frost in winter and drowned by wet in spring, so that it did not come on, are a little rusted.

Joseph McArdle, Proton, Grey: In my time of twenty-one years living in Proton, fall wheat is the best this year of any. The snow was light last winter, which helped it.

N. Read, St. Vincent, Grey: Thinned in some places by wire worm; more midge than we generally have.

D. C. Taylor, Holland, Grey: Some of the earliest sown will give forty bushels per acre.

Walter Scott, Nottawasaga, Simcoe: On sandy loam soil a good turn out; on dry soils frost and spring rains hurt it very much.

William Black, Westminster, Middlesex: The Democrat looks well, being free from both rust and weevil, and the berry large and plump.

James Gilmour, Dorchester, Middlesex: Eaten out last fall by insects, leaving about three acres in a field of fourteen.

James S. Grant, Biddulph, Middlesex: Early sown fields, especially on summer fallows, are heavy and escaped, but late fields and winter-killed spots are ruined by rust.

James Anderson, East Zorra, Oxford: Some varieties are better than others. The newer kinds seem to be the best. The leading variety here, Walker's Reliable, is badly rusted; Democrat not nearly so bad.

Thomas A. Good, Brantford, Brant: Fall wheat was kept back by the late spring, then grew too fast where it was not winter-killed, and was struck with the rust about a month ago. Some fields very bad, hardly worth harvesting; others about half a crop, and a few pretty good. I do not remember as poor a crop of fall wheat on our lands since the midge was here over twenty years ago.

Duncan Macfarlane, Puslinch, Wellington: Fall wheat is a very fine crop where it was sheltered in winter. There is some of it killed out on exposed places, and in low places where the water lay in January. In some places it is badly lodged with the storms, and there is some rust on the late spots, but on the early spots there is none.

Frank Wyatt, Louth, Lincoln: The late rains have caused all wheat not properly shocked to sprout.

George Walker, Clinton, Lincoln: Winter wheat was somewhat winter-killed immediately along the lake. Throughout the rest of the township it is extra fine.

A. G. Muir, Grimsby, Lincoln: Not injured by weather except fields along the lake shore which were not covered by snow during the latter part of winter.

E. D. Smith, Saltfleet, Wentworth: On the mountain, and near the foot of the mountain where the snow lay all winter, wheat never looked better—no poor pieces at all; but nearer the lake in one-third of the township only about half a crop.

A. W. Peart, Nelson, Halton, The hot weather ripened the wheat too rapidly at last, and it was not so plump and bright as it was last year.

William McDonald, Esquesing, Halton: Fall wheat is a heavy crop on land either naturally or artificially drained. In low land it is light and the grain poor. A little damage was done by hail about the 1st of July. Fields ripened unevenly in most cases.

M. Jones, Whitchurch, York: The spring frosts and wet season have caused fall wheat to ripen very nevenly.

D. James, Vaughan, York: Wind and rain have injured heavy crops of wheat so that it has not filled out as was expected.

Thomas Cain, Scott, Ontario: Where wheat was partly killed out it has grown up with a great deal of chess.

H. Clendinning, Brock, Ontario: Fall wheat not very extensively grown. It was winter killed in exposed places. Where it was not killed by frosts it will yield 35 to 40 bushels per acre.

Robert C. Brandon, Brock, Ontario: Many fields were injured to a considerable degree by the frost, and on the return of hot weather the wheat withered and degenerated a good deal, and large green spots appear in many fields.

Wm. Windatt, Darlington, Durham: But little fall wheat sown in this locality. In former years it used to be the principal crop, but now its cultivation generally involves loss. In some light soils and sheltered positions a little is still raised.

C. A. Mallory, Percy, Northumberland: Fall wheat has done remarkably well for the condition in which it was left in the spring, having been badly killed and drowned by frost and wet. Wherever life was left at all it came on well as soon as warm weather set in. It ripened unevenly and late, but is a fair crop; on high land it is an extra crop.

Irvine Parker, Fredericksburg, Lennox: Scarcely any sown: it is not considered a sure crop on account of its liability to winter killing.

Joshua Knight, Storrington, Frontenac: Fall wheat looked well in the spring when the snow left. The cold and wet affected it some, but it recovered wonderfully, and fields that in the middle of May seemed poor now show a fair crop, with splendid heads of grain.

Thomas McDowell, South Gower, Grenville: Where the land is high, warm and dry, this crop is very good, but otherwise miserably poor.

Gideon Fairbairn, Edwardsburgh, Grenville: It appeared to look well when the snow went off, but later in the season the spring frosts injured it.

D. McDiarmid, M.D., Kenyon, Glengarry: Only in exceptional years is there a good crop of this cereal in the eastern section of the Province, and a quarter or a half crop is all that will be realized this season. Those who continue its cultivation plant it in places which they manure and summer fallow, seeding it at the same time with timothy seed. Where this course has not been followed, the ground is ploughed up and spring wheat sowed. The cause of the failure is the killing of the young plants by the frost.

W. J. Summerby, Russell, Russell: Fall wheat generally killed out last winter. A few fields in sheltered places did well.

Wm. Brownlee, Dalhousie, Lanark: Not as good as it promised when the snow left it; considerable killed by spring frost or snow in May.

J. G. Campbell, Bathurst, Lanark: Fall wheat free from rust and insects, but damaged by sparrows.

Dan. Williams, Glamorgan, Haliburton: What was not ploughed up in the spring never recovered from the low temperature and inclement spring. It will probably not be half a crop.

William Armstrong, Otonabee, Peterboro': Fall wheat has ripened to perfection—no rust or blight. About half is housed and the rest would be but for the heavy rain storm on the 3rd August, and the grain is very wet as I write; but the air is cool and it may not sprout.

A. R. Kidd, Dummer, Peterboro': Fall wheat suffered in spring from frost, being deep, causing it to heave, and where exposed in winter it was killed out entirely. No injury by rust or insects.

John Maloney, Douro, Peterboro': A poor crop, generally badly damaged by the frosty, wet, cold and backward spring; well filled, but a great deal of chess and noxious weeds on account of the damaged state of the crop.

John Fell, Somerville, Victoria: Fall wheat suffered from the late, cold spring, and on poor and badly tilled ground was considerably killed out; but the weather since the middle of May has been favourable, and the crop has continually improved. There has been some rust, but not to materially damage the yield.

Stephen Brundige, Ryde, Muskoka: Good in most parts; the berry is large and plump; in some cases it is half chess, but free from rust.

James D. Smith, McLean, Muskoka: Five acres were sown by two parties last fall; the wheat of one of the parties was damaged by last spring's frost; the other's looks well.

Albert H. Smith, Monck, Muskoka: On heavy clay it is good—say thirty bushels to the acre.

SPRING WHEAT.

The condition of the spring wheat crop throughout the Province on the 5th of August, though somewhat inferior to that of fall wheat, afforded ground for hope of a fair average yield in spite of a good many adversities. Seeding was generally a little later than usual, and growth was further retarded by a spell of cold, dry weather in May and early in June, which under ordinary conditions is a period of vigorous development. As a consequence, not only did the plant fail in many instances to stool out fully, but the season was thrown backward from a week to two weeks, according to locality; nearly all the correspondents stated the grain to be still green at the date of the August reports, but the fields were almost invariably reported as luxuriant and highly promising. Even at that date, however, many correspondents in southern sections, where ripening had begun, observed that it was failing to realize the expectations raised by its appearance a short time before. In July there was considerable hot, dry weather, which stimulated a too rapid maturity, and appeared to expose the wheat to its usual enemies—rust, midge and weevil. These evils, especially the two former, prevailed pretty extensively throughout the western peninsula formed by Lake Erie and Lake Huron, the rust attacking the fields just as they showed signs of changing colour. But in what is known as the spring wheat region of eastern Ontario the accounts were at that time more generally favourable. Indeed an unusually hopeful tone pervaded the reports from nearly all parts of the St. Lawrence and Ottawa and East Midland districts. But in the last stages of growth and maturity the crop was overtaken with disaster. With rare exceptions the later reports from western and central Ontario varied only slightly even in their phraseology, in characterizing the quality of the grain. "Total failure," "badly shrunken," "very poor," "only fit for chicken feed," are expressions repeated by correspondents over and over again. There was almost equal agreement as to the causes of failure. "Rain and rust" were the twin evils which, with the occasional assistance of midge and fly, wrought the ruin. As usual, the "goose" wheat is frequently mentioned as escaping destruction by rust. In some portions of eastern Ontario the reports were not quite so generally unfavourable, more especially in the counties of Frontenac, Leeds and Grenville, Dundas, Stormont, Glengarry, Prescott, Russell and Carleton, in which there appear to have been considerable areas of spring wheat sown early on high land which produced a good average sample. In these counties the average yield was about seventeen bushels per acre, but of course the quality was not nearly so good as in former years. In the

other eastern and northern counties of the Province rain, rust and frost combined to give a poor yield and a very inferior sample. The following statement gives the acreage, produce and produce per acre for the last two years:

Districts.	1885		1884		Bush. per acre	
	Acres.	Bush.	Acres.	Bush.	1885.	1884.
Lake Erie	25,624	359,494	15,583	303,300	14.0	19.5
Lake Huron	78,986	815,512	54,971	1,118,341	10.3	20.3
Georgian Bay	95,944	870,417	88,875	1,721,372	9.1	19.4
West Midland	154,946	1,491,263	125,939	2,758,326	9.6	21.9
Lake Ontario	212,364	2,297,866	214,892	4,457,729	10.8	20.7
St. Lawrence and Ottawa	131,240	2,223,007	122,865	2,512,207	16.9	20.4
East Midland	91,478	935,464	89,265	1,579,841	10.2	17.7
Northern Districts	8,881	136,858	9,257	158,245	15.4	17.1
Totals	799,463	9,129,881	721,647	14,609,661	11.4	20.2

With an increased area in crop of 77,816 acres there is a shortage in the product of 5,479,780 bushels; but taking account of the inferior quality of the grain, the failure of last year's crop is more serious than the figures show.

FROM THE AUGUST REPORT.

James Lovell, Brooke, Lambton: Spring wheat is again being grown here. It had been abandoned for a number of years, but is now being tried with good success. The crop this year is very good.

John Anderson, East Wawanosh, Huron, (Aug. 18): When I made the returns on the 5th I put the average of spring wheat too high, as it is almost gone with rust. It will not be over five bushels to the acre.

R. Currie, East Wawanosh, Huron: Since reporting for this township to you on 4th August, the spring wheat has all rusted, and instead of twenty bushels per acre I think (August 14th) there will not be more than five, though the crop has not given as good promise for years.

Walter Hick, Goderich, Huron: Very badly injured by rust and midge, but I find the Arnetka variety is free from both. A great deal, I believe, will not be worth cutting.

N. Robson, Hullett, Huron: Large acreage of spring wheat sown in this township, a great part of which is very much injured by rust, so as not to be worth cutting; some farmers are ploughing it down.

Thomas Kells, Artemesia, Grey: Spring wheat looked well some time ago, but a great deal of it was sown late, and I am afraid there will be serious loss from rust.

C. Cooke, jr., Tecumseh, Simcoe: Looks well; was ripening too fast on account of the drought and extremely hot weather in last of July, but recent rains will help it to fill.

W. D. Stanley, Biddulph, Middlesex: A fair crop of straw, but rusted dreadfully; some fields nearly black.

Henry Anderson, Willow Grove, Middlesex: Good crop of straw, but much hurt by rust, and laid down by storms.

James Anderson, East Zora, Oxford: Spring wheat was sown later than usual, and as a consequence it looks thin and poor, except where sown early and on good soil. It is badly infested with midge, and also shows signs of rust.

Thomas A. Good, Brantford, Brant: Spring wheat looked well until the last few days, but it is now rusted and hardly worth cutting.

Alexander Martin, Downie, Perth (Aug. 17): Since sending my report on Aug. 4th quite a change is seen in the spring wheat. The rust has committed fearful work. In some places it is not worth cutting, except for chicken feed, and take it all in all it will not exceed ten bushels to the acre.

Geo. Leversage, Fullarton, Perth: I wish to correct a statement in reference to spring wheat that I made in my report to you last Wednesday. I then said spring wheat would average ten bushels per acre; that estimate I find, as the wheat nears cutting, was too high. It will be almost a total failure in consequence of rust and midge. Farmers are beginning to reap now in a very green state, hoping it will make more than if allowed to dry up and ripen standing. I intend to reap my own to-day (Aug. 10th) and, if I can secure it in good order, put it through the straw cutter for feed. A great deal of it will hardly be worth threshing.

H. McDougall, Guelph, Wellington (Aug. 14): We had the best prospect for a good crop of spring wheat in this neighbourhood we ever had since 1859. I was out in the neighbourhood to-day for a general observation, and I put the spring wheat down for a dead failure—rust and midge.

John Secord, Grantham, Lincoln: Spring wheat promised a good crop until the few hot days injured it fully one-fourth or one-third. It is shrunk and will not hold the weight.

W. T. Pattullo, Caledon, Peel: Down badly with storm of 3rd and 4th inst.

D. B. Nighswander, Markham, York (August 10): Nearly a failure from rust.

Joseph D. Davidson, North Gwillimbury, York: A very promising crop until lately, when it became affected with rust, which coming on so early will seriously affect the crop, both in quality and quantity. I know fields that are now ruined by it; other fields not so bad.

John Willis, Whitby, Ontario: Badly rusted, and some varieties almost destroyed by weevil, especially White Russian; Oregon, Fyfe and Goose are better.

Robert C. Brandon, Brock, Ontario: In the northern portion of our township we had a very meagre rainfall in June, only 80-100ths of an inch, hence the crop did not develop rapidly in its early stages. July has redeemed it a good deal, as we have had 1 inch and 95-100ths of rain, yet not enough to satisfy the demand; and now, when the wheat has developed, there are widespread accounts of weevil. We have found many fields, and early ones too, containing enough to lessen the yield one-third, and during the past week many fields whitened prematurely from its ravages. Rust is getting very injurious also.

R. Windatt, Darlington, Durham: The recent very hot weather has dried it up before filling, and the late storm of wind and rain has broken it down badly.

James Brock, Cavan, Durham: Rust on some fields, grasshoppers on others. Late seeding and drought have caused them.

Walter Riddell, Hamilton, Northumberland: The early sown damaged by the Hessian fly—the crop thin on the ground; the late sown looks well at present and promises to be a large crop, but as much of it was not sown till after the middle of May it has the risk of rust and midge to run yet.

Wm. Macklin, Haldimand, Northumberland: Spring wheat fair on low and heavy lands, but light on high and dry lands; cause—injured by Hessian fly and dry weather.

James Lane, Denbigh, Addington: A considerable quantity sown in this region, and of excellent quality.

W. N. Mallory, Adolphustown, Lennox: Large crop of straw, but grain will not be over a quarter of a crop on account of midge.

D. McDiarmid, M.D., Kenyon, Glengarry: Appearance very good; no injury suffered from any cause; surface sown will yield a sufficient amount for local consumption.

J. C. Hanley, Tyendinaga, Hastings: A fine promise of crop is now marred by the presence of rust and midge in many places; consequently farmers do not now expect more than half the crop they formerly did.

G. W. Deller, Cardiff, Haliburton: Spring wheat promises a remarkably good yield this year. The cold weather and drought in early summer made it very backward, but since June the weather has been very favourable and its progress has been simply wonderful.

Wm. Ramsay, Mariposa, Victoria: Generally spring wheat is thin on the ground; some complaints on weevil.

Thomas Smithson, Fenelon, Victoria: Late, and rusted very badly on most farms, and a good deal is weevil eaten.

Robert F. Ogle, Carnarvon, Algoma: Spring wheat doing remarkably well since the late rains; crop will not be cut till September.

Albert H. Smith, Monck, Muskoka: The straw is five feet long and upwards, but the value of the crop is reduced by the storm of the 3rd, which laid the heaviest crop as flat as a board.

BARLEY.

With the exception of a few localities, the barley crop of last year was generally heavy and well matured; but with the great bulk of it the colour of the grain—which so largely regulates its market value—was materially damaged by the storm of the 3rd of August. At that date barley cutting was not more than half through; and it was only in the earlier localities, and generally in the case of fields that had been sown and reaped quite early, that any portion of the crop was under cover. Probably not far from three-fourths of all the barley in the Province was out in that storm, either in the shock or standing ripe and ready to cut. In consequence of this misfortune the sample was more or less dark in colour, but for which cause the return would have been satisfactory in every way. The crop in nearly every district was exceptionally heavy and long in the straw, and the heads were large and plump. Not more than one or two complaints were made of straw—a circumstance rather unusual in the case of this crop. The only unfavourable reports of note come from portions of the counties of York, Ontario, Durham and Northumberland, where a week or two of excessively hot and dry weather, occurring just at the time the grain was forming, caused it to ripen too quickly, and the berry was rather small and light in consequence. But the reported shrinkage applies to only a portion of that fine barley district, and does not seem to have been general. The reports from all parts of western Ontario are pretty uniform as to the damage inflicted by the rain, except that in

Lambton and Middlesex, where harvesting appears to have been more forward than elsewhere, probably one-half of the crop was housed before the storm came. The broken weather continued for some time, and, in addition to considerable delay in the harvesting, the crop in many cases was housed in an uncured condition. The early sown fields in some eastern counties appears, however, to have escaped the worst effects of the prevailing wet weather, and the grain proved to be a fairly good sample. In all districts barley on low and heavy soils suffered from the excess of rain; but in some instances it became lodged from too rank a growth, and in that condition it was struck with rust. The general estimate of correspondents was, that from two-thirds to four-fifths of the entire product of the harvest was discoloured by the rains; that, at the best, but little of it would grade higher than No. 2, and much of it lower; but that in conjunction with other coarse cereals, it was certain to furnish an abundance of valuable feeding grains for the winter. The statistics of this crop for the years 1884 and 1885 are as follows for the county groups:

Districts.	1885.		1884.		Bushels per acre.	
	Acres.	Bush.	Acres.	Bush.	1885.	1884.
Lake Erie	30,410	861,857	39,021	1,079,938	28.3	27.7
Lake Huron	44,150	1,269,767	58,150	1,586,036	28.8	27.3
Georgian Bay	41,586	1,055,320	51,237	1,427,881	25.4	27.9
West Midland	95,506	2,818,803	120,375	3,688,955	29.5	30.6
Lake Ontario	237,144	6,720,814	259,546	7,118,983	28.3	27.4
St. Lawrence & Ottawa	82,171	2,116,612	96,274	2,298,211	25.8	23.9
East Midland	64,801	1,640,036	73,917	1,871,321	25.3	25.3
Northern Districts	2,105	50,378	1,952	47,716	23.9	24.4
Totals	597,873	16,533,587	700,472	19,119,041	27.7	27.3

The decrease in area is general over the Province and reaches a total of 102,999 acres, or about 14½ per cent. less than in 1884. The decrease in the yield is 2,585,454 bushels, or 13⅓ per cent. less than in 1884.

FROM THE AUGUST REPORT.

Robert Manery, Mersea, Essex: I think it is below the average, and the rain came in time to catch most of the barley cut and in the field, consequently the colour will be bad.

Geo. Hope, Tilbury East, Kent: Not much grown here, but of what there is a great deal has been out under the rain, which will greatly spoil it.

Geo. A. Marlatt, Bayham, Elgin: Cannot be over two-thirds of a crop; badly injured by cut-worms.

Albert Gilbert, Woodhouse, Norfolk: A very good crop, but most of it will be badly coloured, scarcely any having been secured without rain.

Robert Jepson, Walpole, Haldimand: A good crop of straw, but the grain will be very light; too much dry weather.

James McClive, Bertie, Welland: Very little sown here on account of price rating so low; doesn't pay expenses.

Joseph H. Patterson, Dawn, Lambton: Not much sown; looks only middling; injured only by wet weather on low heavy land, where such grain should never be sown with the slightest expectation of getting a crop.

R. Fleck, Moore, Lambton: A fine crop; nearly all cut and saved in good order.

Donald Blue, Huron, Bruce: Never saw a better appearance; will yield largely if secured in good condition.

A. G. Hunter, Proton, Grey: Barley is a fine bright crop.

William Milne, Osprey, Grey: Was injured to some extent in places by grub or wire-worm.

Thomas Kells, Artemesia, Grey: Not much barley saved yet; the weather is not favourable for preserving colour.

W. W. Colwell, Essa, Simcoe: Not as much grown as in previous years; promised well, but the recent very heavy rain will probably discolour much of it.

R. T. Banting, Essa, Simcoe: Barley promises to be a fair crop; scarcely, however, up to the average of former years.

Geo. Smeath, Vespra, Simcoe: Heavy crops of barley; later in ripening than usual.

J. M. Henderson, Adelaide, Middlesex: Barley is a good crop, but it will have to be fed to stock owing to the passing of the Scott Act in so many counties in Ontario.

James Fisher, London, Middlesex: A very good crop, but affected some by rust.

Geo. Douglas, London, Middlesex: A good crop, and mostly harvested.

Wm. Brown, Blenheim, Oxford: A very good crop; say thirty-five bushels to the acre.

Henry Key, Oakland, Brant: Some of the fields are the heaviest I ever saw; will be above the average, but somewhat coloured.

Duncan McLaren, Hibbert, Perth: A good yield, but badly discoloured by late rains; not a great quantity saved.

R. E. Thompson, West Garafraxa, Wellington: Promises well, but a slightly decreased acreage.

Chas. Nicklin, Pilkington, Wellington: Less sown than usual; spring wheat taking its place.

Hugh McDougall, East Luther, Dufferin: Probably fifty per cent. more than usual sown, and promises an extra large yield.

John Secord, Grantham, Lincoln: Barley is a very good crop, quite up to the average; very little has been threshed yet.

W. M. Calder, Glanford, Wentworth: Barley is an excellent crop; the rain during the present week will have the effect of injuring it in colour at least.

A. W. Peart, Nelson, Halton: Ripened too rapidly at last, and will not be plump; well secured.

John Sinclair, Chinguacuosy, Peel: Berry not so plump as last year, and owing to the severe rains of last few days the greater part will be coloured.

D. B. Nighswander, Markham, York: Ripened rather too fast, and will be badly coloured by rains.

John Willis, Whitby, Ontario: Barley ripened too fast, and did not fill very well on account of drought and hot weather.

S. H. Stevenson, Pickering, Ontario: Generally very good, though from want of rain will be rather light.

James Brock, Cavan, Durham: Barley generally an average crop, but will be small in grain.

E. J. Honey, Percy, Northumberland: Barley is generally a heavy crop, though some fields have ripened rather too fast. About a quarter or a third of the crop has been harvested in good condition, and will be extra bright; the remainder is out and the weather is rainy.

John Moore, Sophiasburg, Prince Edward: Many fields of barley are lying down with the rank growth and storms.

Samuel N. Smith, Sophiasburg, Prince Edward: Barley is of very good quality, and is being harvested in fine condition; has not had a better appearance for many years, but not so much sown as usual.

John Edgar, Kitley, Leeds: Not much barley grown here, but it is generally good on high land.

Wm. Ferguson, West Hawkesbury, Prescott: Barley promises a good crop; not a large acreage.

J. C. Hanley, Tyendinaga, Hastings: Promises well; some complaints of rust, but the heavy rains of the past three days must damage the colour.

Wm. Armstrong, Otonabee, Peterboro': Barley promised to be a fair average crop, but the hot weather in July made it to ripen too fast, and the grain will not be large.

Thomas Butler, Croft, Parry Sound: Not up to the average; thinned out by drought; good on new land.

OATS.

The early part of the season was not very favourable for the growth of oats, but throughout the latter part of July the crop improved steadily, and cheering accounts were received at the beginning of August from all parts of the Province. The best reports, however, came from the eastern and northern districts, where it is largely grown to supply the markets of the lumber woods. In spite of the late seeding season and slow germination the straw made good growth, the heads were large and well loaded, and the prospect was full of promise everywhere. But the violent wind and rain storm of the 3rd and 4th of August led many correspondents at that time to fear that serious damage might be sustained, especially as many green fields were lodged, and traces of rust and smut began to appear, and later reports proved that these fears were too well grounded. Owing to unusually rank growth in its later stages, the general lateness of the season, and the August storm, the ripening period was delayed considerably past the ordinary time. It is under such conditions that rust is usually developed; and the weather and temperature being likewise conducive to it, a large proportion of the oat crop of the Province became speedily affected by this scourge. In western Ontario only the earliest sown fields, or those in high situations, escaped and ripened to perfection. In the eastern part of the Province, in the Lake Ontario group, the prospect was slightly more encouraging, but throughout north-eastern Ontario the crop was so late that many fields were touched with frost before the grain

was fully ripe. In the Lake Erie district, oats were seriously damaged by grasshoppers during the growing season. The following table gives the statistics of the crop for the past two seasons:

Districts.	1885.		1884.		Bushels per acre.	
	Acres.	Bush.	Acres.	Bush.	1885.	1884.
Lake Erie	158,017	6,038,382	161,260	6,633,512	38.2	41.1
Lake Huron	163,309	6,148,832	161,711	6,143,688	37.7	38.0
Georgian Bay	134,615	4,438,871	130,164	4,512,399	33.0	34.7
West Midland	311,266	11,854,476	296,221	12,373,478	38.1	41.8
Lake Ontario	271,268	9,838,804	267,608	10,964,154	36.3	41.0
St. Lawrence & Ottawa	375,256	12,866,040	343,785	13,039,463	34.3	37.9
East Midland	113,260	3,550,311	105,250	3,506,965	31.3	33.3
Northern Districts	16,754	494,026	15,829	522,645	29.5	33.0
Totals	1,543,745	55,229,742	1,481,828	57,696,304	35.8	38.9

In all the districts excepting the Lake Erie counties there was a larger breadth sown last year than in 1884, being 61,917 acres more for the whole Province, or an increase of 4 per cent. In the St. Lawrence and Ottawa counties alone the increase was 31,471 acres, which was fully one-half of the whole. But the average yield per acre all over was three bushels less than in 1884, and the aggregate yield was less by 2,466,562 bushels—a decrease that with so large a crop is only serious when the quality of the grain is poor.

FROM THE AUGUST REPORT.

R. C. Taylor, West Tilbury, Essex: Early oats are good, and late ones have been saved by the showers we have just had.

George Little, Sandwich East, Essex: A splendid crop here—I think the best we have had for some years.

C. Darling, Howard, Kent: An excellent crop, but the oats have been laid flat by the heavy rains.

G. R. Langford, Camden, Kent: The grasshoppers are stripping the oats off the straw pretty badly, near any woods, pasture fields, or fence sides.

James Morrison, Walsingham, Norfolk: A fair crop, if the dry weather does not last too long. They seem to be ripening too fast; I don't think they will fill well.

William Chalmers, Sherbrooke, Haldimand: Very good on low land, but short in the straw on high land.

Andrew Childs, Dawn, Lambton: Oats, like corn and barley, were prevented from making a vigorous early growth owing to a late and cold spring, and too much cold weather during part of June. Still the crop is fair.

D. S. Robertson, Plympton, Lambton: Late rains have rushed them forward beyond expectations. Yesterday's rain (Aug. 4) made sad havoc among heavy oats; east wind in the morning veered round to the west in the afternoon with heavy showers, making the same whirl among the oats.

Walter Hick, Goderich, Huron: A fearful lot of smut; still the good heads seem large and appear to be filling up.

E. Cooper, Howick, Huron: Oats are short except on strong ground; probably the cause is that there was a week of very dry hot weather.

Malcolm McDonald, West Wawanosh, Huron: The crop has been injured by the great heat and drought of the past two weeks, ripening it too fast.

Thomas Fraser, Huron, Bruce: Very heavy straw; most people say too much straw. If they fill out well, plenty of pieces will yield 60 bushels per acre.

Wm. Irwin, Bentinck, Grey: A magnificent crop; the late rains have done some damage by lodging.

Henry Atkey, Keppel, Grey: The oat crop of this season is beyond anything we have had for years.

Geo. McLean, Oro, Simcoe: Oats look well, but are badly beaten down by the storm of the 3rd.

Andrew Robinson, McGillivray, Middlesex: Oats very good, but badly lodged, which will make the crop difficult to harvest.

David Webster, Mosa, Middlesex: Great damage has been done to the oat crop by the grasshoppers.

H. McDougall, Guelph, Wellington (Aug. 14): I have been over fifty years farming, and the storm of the 3rd inst. was the most destructive I ever saw among heavy grain. All the heavy oats are down, and how to cut them I do not know.

Wm. Brown, Blenheim, Oxford: The biggest crop all over I have ever seen.

William Whitelaw, Guelph, Wellington: One of the largest crops I have ever seen; the greater part was laid down quite flat on the 3rd; a great part of it will not rise, and this will injure the quality and make harvesting difficult.

James Wilson, Dumfries, Waterloo: Considerable injury is being done by grasshoppers; I am afraid by the time the crop is ripe there will be very few oats left on the stalks.

E. D. Smith, Saltfleet, Wentworth: Like all spring cereals, oats promise to yield an abundant crop; the season has been very favourable for all crops.

Wm. McDonald, Esquesing, Halton: Oats are a splendid crop, but they have been badly lodged and tangled by the rain and wind storm of the 3rd inst.; and as they are pretty well filled large patches of them will not rise, making them much more difficult to harvest.

R. M. Van Norman, North Gwillimbury, York: On the low lands oats are very heavy, but on the high lands about an average.

F. C. Sibbald, M.D., Georgina, York: In some places so rank that the storm of the 3rd inst. flattened them as if they had been run over by a roller. The gale from the opposite direction afterwards raised them a good deal.

Robert C. Brandon, Brock, Ontario: Oats being late did not prosper in June owing to the drought. However, July has much improved the crop, and it promises fairly good, though not up to last year.

C. A. Mallory, Percy, Northumberland: A variable crop, some very heavy and some very light; cannot account for the difference unless it may be in the preparation of the soil.

A. J. File, M.D., Ameliasburgh, Prince Edward: Oats promise a fair crop. The late dry spell has injured them a good deal, but they will recover since timely rain has fallen.

John Simpson, Kingston, Frontenac: Oats are all that can be desired; probably the best oat crop this township has seen for years.

John N. Poole, South Crosby, Leeds: Oats on high land a good crop, but much beaten down by the late storm.

A. Harkness, Matilda, Dundas: A fine crop, though lodged pretty badly in places; they are to a considerable extent taking the place of barley.

D. McDiarmid, M.D., Kenyon, Glengarry: A large quantity over that required for home consumption is yearly grown here.

W. R. Petrie, Russell, Russell: A good crop; oats and hay are our principal crops here.

A. Shultz, Sebastopol, Renfrew: Oats promise to be a good crop, but as they were mostly sown very late it is hard to say what may happen yet.

J. G. Campbell, Bathurst, Lanark: Will be an immense crop, but damaged considerably by lodging.

F. B. Prior, Sidney, Hastings: Capital prospects of an abundant crop if weather continues prosperous.

Geo. W. Deller, Cardiff, Haliburton: Not very good owing principally, I think, to very late sowing—altogether too late. A good many did not get them in till June.

John H. Delamere, Minden, Haliburton: The dry, hot weather turned some of the straw yellowish before the grain formed. The recent rain has benefitted them a good deal, and the crop may be fairly estimated as an average.

Wm. Ramsey, Mariposa, Victoria: Oats are not very heavy. Only those that were put in early are likely to be an average crop. Those that were put in late have been affected by the dry weather, but if we get some rain they may improve.

John Bailey, Laxton, Victoria: Oats are very short. The last two weeks of hot and dry weather brought them to maturity too quickly; but the rains of the 3rd of August will cause them to fill well.

Nelson Heaslip, Bexley, Victoria: Oats are a nice even crop, but the straw in general will be short owing to dry weather. The yield and quality of grain are expected to be good.

James D. Smith, McLean, Muskoka: Straw short except on new land.

Albert H. Smith, Monck, Muskoka: Very short straw; tillered badly; best crops are on dry land; showed signs of premature ripeness before rain.

Frederick N. Toye, Draper, Muskoka: Look well, but are fully two weeks later than usual; think they will be struck by frost before fully ripe, and that the grain will be light in consequence.

H. Armstrong, McKellar, Parry Sound: Beautiful crop; stands high; covered the stumps before shooting; no injury from any cause I know of.

Thomas Butler, Croft, Parry Sound: Oats have the appearance of being the leading crop this year—very good indeed.

RYE.

Rye appears to be steadily diminishing in favour with the great majority of the farmers of Ontario. As a rule they find it to be less profitable than almost any other crop they raise, hence it is becoming gradually crowded off the better lands by other cereals which are in more general demand. As, however, rye will thrive on poor, light or stony lands, which will sustain little else of value, it affords a means of utilizing these

to some advantage. Throughout western Ontario the great mass of the farmers do not grow it at all. In the few exceptional cases where it is found, the cattle are generally turned into it for pasturage, or it is cut while green for fodder; and this appears to be its most economic use, especially when fed to milch cows or to ewes. The grain product of the crop comes almost wholly from the easterly and north-easterly sections of the Province—from Northumberland eastward and northward. During the past year it largely shared the fortunes of wheat, though apparently it was much less afflicted by the prevailing pests. The reports vary all the way from "very poor" to "very good." On the occasional patches where grown throughout the west it was pronounced an excellent crop. In the east it suffered considerably from winter-killing and from frosts and cold rains in May and June. These influences left the straw rather thin and short, but the heads were long and well filled and the grain was in a healthy state. Reaping began about the same time as that of fall wheat, or a little earlier, and was performed under usually favourable auspices. The area and yield by county groups were as follows for 1884 and 1885:

Districts.	1885		1884		Bush. per acre	
	Acres.	Bush.	Acres.	Bush.	1885.	1884.
Lake Erie	10,980	185,425	11,452	183,105	16.9	16.4
Lake Huron	454	8,099	557	8,722	17.8	16.2
Georgian Bay	1,479	30,360	2,445	40,293	20.5	16.4
West Midland	3,435	51,907	4,026	72,762	15.1	18.1
Lake Ontario	21,065	319,779	29,989	439,319	15.2	14.6
St. Lawrence and Ottawa	25,520	446,629	39,433	667,652	17.5	16.9
East Midland	14,778	219,677	14,381	211,730	14.9	14.7
Northern Districts	582	9,630	1,153	24,676	16.2	21.4
Totals	78,293	1,271,506	103,416	1,648,259	16.2	15.9

FROM THE MAY REPORT.

John Warnock, West Tilbury, Essex: Good rye grows well on light soil, and stands the winter better than wheat.

George Russell, Mersea, Essex: A little rye is grown on Point Pelee; the condition is fair.

W. Y. Emery, Bayham, Elgin: Rye looks well.

James Morrison, Walsingham, Norfolk: Considerable rye is grown here and is looking very well.

John Ostrander, Middleton, Norfolk: A considerable quantity of rye has been sown, and invariably looks well.

Thomas Brown, North Cayuga, Haldimand: Winter rye is looking well here; not much sown.

Chas. Henderson, Wainfleet, Welland: Some winter rye sown here and it looks very well.

James Thompson, Warwick, Lambton: A little rye grown in this township for feeding purposes only. It looks very well.

Richard Coad, Ekfrid, Middlesex: A little is grown for soiling and straw to bind corn shocks, and seed for next year, by two or three farmers in this township. Very healthy but not very forward.

Thomas Baird, Blandford, Oxford: Some rye is grown in the southern part of township; it is looking well at this season of the year.

Isaac A. Merritt, Grimsby, Lincoln: But very little rye is grown in this township. That which I have noticed is not doing very well; it seems very thin on the ground.

Alexander Servos, Niagara, Lincoln: Very little grown, but the condition is good; it is chiefly grown for pasture.

James Brock, Caven, Durham: Some rye is grown, but not so much as formerly. It seems to be all living, but very late.

John Williams, Hamilton, Northumberland: Quite a little rye is grown on light and gravelly land, and it is in pretty good condition.

Samuel N. Smith, Sophiasburg, Prince Edward: A large acreage of rye is sown, and it bids fair for a good crop.

Jacob H. Roblin, Adolphustown, Lennox: Not much winter rye is grown here, but what there is looks splendid.

William Thompson, Portland, Frontenac: Considerable rye is sown here, and it looks excellent.

John Elkington, Palmerston, Frontenac: Rye is a favourite crop to seed down for cattle feed, and it looks very well indeed. It was sown early, brairded well and promises well.

Alex. Buchanan, South Gower, Grenville: Not so much rye was sown as last year, owing to prices being low. It is a very fair crop, the same conditions usually governing it as fall wheat.

John McLellan, Clarence, Russell: A good deal of rye has been sown of late years; but it does not pay, and the farmers are giving it up.

F. Kosmark, Admaston, Renfrew: Winter rye is grown to some extent, but less than a few years ago; its condition is good.

Thos. Wasmund, Radcliffe and Raglan, Renfrew; A large quantity of rye is grown, and its condition is good.

Wm. Selkirk, Petewawa, Renfrew: A good deal of rye is sown here, but it is about one-third winter-killed.

Isaac McKenzie, Drummond, Lanark: Very little rye grown as compared with some years ago; its condition is good.

William Armstrong, Otonabee, Peterboro': Winter rye, like the fall wheat, was winter-killed on hilly land. Vegetable life could not stand the extreme frost we had this winter. What is left looks fresh and healthy.

Porter Preston, Belmont, Peterboro': Considerable rye is grown; it looks well and is in good condition.

John H. Delamere, Minden, Anson and Hindon, Haliburton: The winter rye crop is very limited here, being confined to a few German settlers and on a small scale; it seems to do fairly well.

Daniel Williams, Glamorgan, Haliburton: It has stood the winter well, but cold weather retards growth.

J. C. Hanley, Tyendinaga, Hastings: Winter rye appears better than fall wheat.

James McGregor, Wollaston, Hastings: Winter rye is the chief fall crop, and it gives promise of an average yield.

FROM THE AUGUST REPORT.

Robert Cumming, Harwich, Kent: One of my neighbours planted a corn field with rye last fall and ploughed it under in the beginning of June, and has now as fine a field of beans as there is in the township.

John Morrison, Plympton, Lambton: There is no rye grown in this section, or so little that it is not worthy of notice. The ground and seasons are favourable to the crop, and some large crops have been grown in this county, but there seemed to be no market or demand for it.

Charles James Fox, Delaware, Middlesex: None sown, except for pasture or to plough under.

Rolph Forsyth, Pickering, Ontario: None grown in this section except for pasture on summer fallow.

Wm. Windatt, Darlington, Durham: A fine crop both of straw and grain; sown mostly on poor, light soils.

C. A. Mallory, Percy, Northumberland: Not so much grown as usual; the less grown the better for our farmers. I consider it the hardest crop with least profit we can raise.

James Lane, Denbigh, Addington: Rye very good, but thinned out somewhat by the winter.

D. McDiarmid, M.D., Kenyon, Glengarry: In the neighbouring township of Roxborough, on lands which have been exhausted by repeated cropping, a change in the crop has been introduced, rye being rather extensively sown.

J. C. Hanley, Tyendinaga, Hastings: Never recovered from the cold rains and ice of the spring; it is a very light crop.

Daniel Williams, Glamorgan, Haliburton: Fall rye, large area and excellent crop, now ready to harvest; spring rye promises well.

Frederick N. Toye, Draper, Muskoka: Rye crop good; grown principally by the German settlers.

PEASE.

Farmers are fast returning to the cultivation of this crop, now that the ravages of the bug have almost altogether ceased. At the time the August reports were sent in to the Bureau, the crop generally wanted from a week to ten days to be ready for cutting, but the general appearance of the crop then indicated that it would be large and of good quality. So far as could be ascertained at that time there were few bugs to be seen, and the later accounts show that little harm was done by these pests of former years. The crop, however, suffered somewhat in the counties of Norfolk and Haldimand, as well as in several of the counties bordering on Lake Ontario, where dry weather set in before the plants had attained sufficient height to shade the ground, and the pod matured too rapidly in consequence. On the other hand, mildew appeared in some places where there

was excess of moisture, and it developed and extended during the rainy season which followed, especially on low, rich and heavy lands. A large proportion of the crop was harvested in good condition, but much of it ripened unevenly and was reaped and housed under difficulties. On the whole it may be said that, though the yield was a fair one as to quantity, the quality was extremely variable. The average sown, produce of the crop, and average yield per acre are presented in the following table for two years:

Districts.	1885		1884		Bush. per acre	
	Acres.	Bush.	Acres.	Bush.	1885.	1884.
Lake Erie	60,287	1,228,813	41,337	961,956	20.4	23.2
Lake Huron	76,470	1,892,638	64,047	1,541,273	24.8	24.1
Georgian Bay	74,826	1,629,321	74,504	1,832,321	21.8	24.6
West Midland	131,300	3,124,527	103,791	2,684,556	23.8	25.9
Lake Ontario	143,516	3,044,397	126,784	3,083,994	21.2	24.3
St. Lawrence & Ottawa	101,723	1,947,918	104,749	2,373,579	19.1	22.7
East Midland	50,507	974,961	48,855	1,045,548	19.3	21.4
Northern Districts	7,452	163,617	6,861	168,380	22.0	24.5
Totals	646,081	14,006,192	570,928	13,691,607	21.7	24.0

The increase in breadth sown has been chiefly in the Lake Erie, Lake Huron, West Midland and Lake Ontario groups of counties. This no doubt is due to the fact that the ravages of the pea-bug in past years have been confined almost wholly to those sections of the Province; in the northern and north-eastern districts the bug has been comparatively unknown, and hence its disappearance there is not marked by any change in the breadth sown.

FROM THE AUGUST REPORT.

Ed. T. Watts, Zone, Kent: Pease promise to be a good crop; no damage by weather, and very free from insects.

Matthew Martin, East Tilbury, Kent: A very good crop, and about twice as many sown as in former years.

George A. Marlatt, Bayham, Elgin: Badly injured by cut worms; two-thirds of a crop is the best we will have.

J. D. Clement, Windham, Norfolk: They have been very much injured by the dry weather.

Robert Jepson, Walpole, Haldimand: Generally good, but more bugs than last year.

Robert Rae, Bosanquet, Lambton: Not many sown; a fair crop; not damaged by insects as has been the case in former years.

Joseph H. Patterson, Dawn, Lambton: Not many sown here, the farmers preferring corn as a crop. What we have look well, and they will make about an average crop. There are some bugs in them as usual.

Wm. McArthur, Ashfield, Huron: Pease extra good; not injured by the bug.

George Hess, Hay, Huron: There are more bugs than last year, but they are not so bad as in former years. There will be a heavy crop.

Daniel Sullivan, Brant, Bruce: A1 everywhere; the best crop for years.

John McCallum, Bentinck, Grey: One of the best crops ever harvested in this part.

Archibald Brown, Keppel, Grey: Pease look remarkably well, and should the weather continue favourable until harvested will be the largest crop for years.

George Cowan, Innisfil, Simcoe: A good crop; more straw than last year, but the dry weather ripened them rather fast; many will be small in pod.

James A. Glen, Westminster, Middlesex: A good crop on rolling and dry land, but sickly on level damp soils.

Richard Jolliffe, North Dorchester, Middlesex: Better than for some years past. The vines are well loaded, and a good old-fashioned crop is expected.

John Henderson, East Nissouri, Oxford: A very good crop; better than we have had for eight or ten years, and no bugs.

Duncan McLaren, Hibbert, Perth: A fine crop; bugs have apparently done little damage.

James Cross, Peel, Wellington: A good crop, excepting on undrained and very heavy soils, where they were scalded out.

Robert Shearer, Niagara, Lincoln: Mostly sown late and made a fine start, but have been hurried forward so that the present prospect is very poor.

David Bell, Beverley, Wentworth: Peas are much better than in former years.

M. Clements, Trafalgar, Halton: Peas a very fine crop, except on low and badly drained land.

Edward Dalton, Nelson, Halton: A good crop, but the blossom has been injured by the recent heat.

John Sinclair, Chinguacousy, Peel: Pease promise an excellent crop; a large area sown; no sign of pea bug as yet.

D. James, Vaughan, York: Hot weather ripened the crop rather too quickly; some fields will be ready to cut in a week.

N. A. Malloy, Vaughan, York: Appear to have been injured by excessive heat; promise poorly.

John Willis, Whitby, Ontario: Early sown pease are good; those sown later will be injured by drought and hot weather; no bugs.

Wm. Windatt, Darlington, Durham: Generally a good crop, but have suffered some from the drought.

E. J. Honey, Percy, Northumberland: Some fields that were just commencing to blossom will be very much injured by the drought.

John A Sprague, Sophiasburgh, Prince Edward: Pease are looking well, and many fields are now so far advanced that they are certain of yielding an extra crop, but there is a large amount of late sowing and it is hard to tell at this date how that part of the crop will be.

John Maloney, Douro, Peterborough: Pease promise to be abundant; pods plentiful and filling well.

Joshua Knight, Storrington, Frontenac: Extra good, except on low land, where some have turned yellow.

Wm. Webster, Lansdowne, Leeds: Will be ripe in two weeks; the prospect now is for the bes crop in twenty years.

Dr. McDiarmid, Kenyon, Glengarry: A large amount of straw with a good supply of pods; n injury from insects or weather; crop yet green.

James Surch, South Plantagenet, Prescott: Not so many sown as usual; a few fields are good, but many fields on clay are yellow from too much rain and won't be more than half a crop.

John Stuart, McNab, Renfrew: A remarkably fine crop, and some early fields are ready for cutting.

Charles P. Ferguson, Carnarvon, Algoma: Pease looking well; not injured by bugs or affected much by drought.

BEANS.

Beans are a small and exceptional crop in Ontario. Kent is the only county where they are now largely cultivated as a field crop. In a few other localities, in the vicinity of lumber districts, the demands of the shanties make them a profitable product; but with these exceptions beans are an insignificant crop, farmers usually contenting themselves with raising in their gardens only enough for domestic or local consumption. Like all other field crops of last year, they were considerably affected by the general backwardness, coldness and humidity of the season. They were planted late, they grew and ripened slowly, and they were not in many cases pulled until late in October. In the Lake Erie counties they were somewhat rusted and discoloured by the excessive rains, but were only slightly affected by frost. In the more northerly and easterly districts of the Province, frost was more injurious. Unless where some local or exceptional circumstance, however, makes field beans a paying crop, the disposition of farmers appears to be to devote less attention to their cultivation. The statistics of the crop for the two years are as follows:

Districts.	1885.		1884.		Bushels per acre.	
	Acres.	Bush.	Acres.	Bush.	1885.	1884.
Lake Erie	17,466	332,617	14,672	337,284	19.0	23.0
Lake Huron	677	14,923	645	15,905	22.0	24.7
Georgian Bay	236	4,045	222	4,026	17.1	18.1
West Midland	976	18,623	2,139	46,900	19.1	21.9
Lake Ontario	1,637	35,570	2,848	80,402	21.7	28.2
St. Lawrence & Ottawa	3,006	78,561	3,751	95,192	26.1	25.4
East Midland	593	10,550	533	10,486	17.8	19.7
Northern Districts	60	1,675	68	1,849	27.9	27.2
Totals	24,651	496,564	24,878	592,044	20.1	23.8

Although the breadth planted in the Lake Erie counties was increased by nearly 3,000 acres, the yield was scarcely equal to that of the previous year, and with a difference of only 227 acres in the whole Province the yield was 95,480 bushels less.

FROM THE AUGUST REPORT.

Mathew Martin, Tilbury East, Kent: Beans promise to be an abundant crop, and a great many acres have been planted on account of the failure of corn.

George M. Baird, Harwich, Kent: Beans promised extra well at one time, but the excessive rains of late have scalded them and injured the prospects of the crop one-third. The late beans will be the best crop; large acreage planted.

C. Darling, Howard, Kent: Beans were in fine condition up to the night of August 2nd, but the heavy rains of the 3rd will have the effect of drowning them out on low land; yet I think the crop will average from 20 to 25 bushels per acre.

Peter Stalker, Aldborough, Elgin: Beans, although not extensively raised in the township, are looking well. In fact so far beans are looking better than I ever remember seeing them.

James McCullough, Uxbridge, Ontario: Beans are not cultivated to any extent, though the land in this township is adapted to them.

James Parr, Cartwright, Durham: Not nearly so much planted as last year, probably on account of want of demand and low price of the article.

James Findlay, Westmeath, Renfrew: Very good prospects and considerable sown—white beans for use in shanties for pork and beans.

James D. Smith, McLean, Muskoka: Very few raised here; they are considered a risky crop.

Henry W. Gill, Watt, Muskoka: Beans have promise of an abundant crop, and are exceptionally well podded.

Charles P. Ferguson, Carnarvon, Algoma: Very few grown; too much frost, excepting in high localities.

FROM THE NOVEMBER REPORT.

Robert Cumming, Harwich, Kent: The bean crop promised well at one time, but rust and wet weather caused serious damage. The crop has all to be hand-picked.

Samuel Russell, Oxford, Kent: Beans are badly rusted in most places, except the large kind which ripened later, and were mostly harvested in dry weather.

D. McKillop, Aldborough, Elgin: In many instances, owing to the lateness of the season, beans were not planted as early as usual, and consequently did not ripen before the first frosts came.

E. W. Fares, Humberstone, Welland: Beans are a light crop, and are somewhat injured by rainy weather at the present time.

C. A. Mallory, Percy, Northumberland: Did not ripen well on account of cool weather and frost.

INDIAN CORN.

The conditions of climate appear to have been pretty generally the same throughout the whole corn-growing belt of the Province; complaints of the same adversities come from all sections about equally. At the beginning of the season the crop got a very poor start. The spring was late and cold, which discouraged planting, and nearly all fields after being planted were seriously shortened by deleterious influences. Large quantities of seed failed to germinate, and rotted in the ground—a circumstance which correspondents variously attribute to the use of bad seed, to the operations of worms and grubs, and to the prevalence of cold and wet weather in May and June. A good many fields made such a poor showing that they were ploughed up and replanted with buckwheat or some other grain, or allowed to remain in fallow. The growth of the corn fields was afterwards retarded somewhat by drought, and the cold, rainy weather of August did not tend to brighten the prospects. As a result, not only has the corn area been materially shortened and the fields thinned, but large quantities of grain did not become ripe enough for harvesting when the early frosts came, so that it had to be gathered in a soft or frosted condition, and used for fodder. Low and undrained, or heavy clay lands suffered the most. Where the soil was light and dry, either naturally or from drainage, the crop weathered the rains and frosts more successfully, and was in a position to profit by the period of bright, warm weather which came in September and extended into the early days of October. In the main, therefore, the crop has turned out a good deal better than

its condition earlier in the season indicated; most of the counties of the corn belt along the shore of Lake Erie, although reporting many cases of failure, show a fair produce for the year—perhaps only slightly below the average, but considerably below the harvest of 1884. Outside of this district the effects of the wet weather and early frosts have been more fatal, and have reduced the bulk of the crop to comparatively insignificant proportions. The figures are as follows:

Districts.	1885. Acres.	1885. Bush.	1884. Acres.	1884. Bush.	Bushels per acre. 1885.	Bushels per acre. 1884.
Lake Erie	91,694	6,378,006	93,883	7,586,720	69.6	80.8
Lake Huron	8,131	550,362	9,653	639,835	67.7	66.3
Georgian Bay	895	47,220	723	44,760	52.8	61.9
West Midland	21,983	1,483,309	24,351	1,762,160	67.5	72.4
Lake Ontario	23,875	1,264,923	24,533	1,673,794	53.0	68.2
St. Lawrence & Ottawa	15,692	796,831	15,131	898,543	50.8	59.4
East Midland	5,281	209,710	5,901	313,000	39.7	53.0
Northern Districts	280	11,030	385	17,077	39.4	44.4
Totals	167,831	10,741,391	174,560	12,935,889	64.0	74.1

The product is reckoned as corn in the ear, one bushel of which is estimated as equal to half a bushel of shelled corn.

FROM THE NOVEMBER REPORT.

J. H. Morgan, Anderdon, Essex: Except a slight injury to late corn, the weather did no injury.

Arthur J. Arner, Gosfield, Essex: Corn did not ripen properly, I think owing to the cool weather of August and the dry weather of the latter part of September. Late corn was much damaged by frost. The heavy rains of June 5-12 did much damage, causing the seed to rot, and also left the ground in a bad state for after cultivation.

Robert Manery, Mersea, Essex: Corn was considerably broken down by high winds and rain in August.

Robert Cumming, Harwich, Kent: Corn suffered from a slight frost when a good share of it was in the milk; as a result, it did not feed nor fill. There is lots of soft corn.

Alex. Young, Harwich, Kent: Much of the corn had to be replanted on account of bad seed and grub.

Daniel McKillop, Aldborough, Elgin: Owing to inferior seed, much of the corn had to be planted a second time, and some even a third time. All such is injured from thirty to forty per cent. First planting all O.K.

John A. Squance, Yarmouth, Elgin: Corn was damaged by a heavy storm about harvest, which broke a good deal of it down, and made it difficult to cut. Late corn was hurt by frost.

E. M. Crysler, Charlotteville, Norfolk: Corn is in good condition. The frost came late, and gave plenty of time for ripening.

C. H. Kitchen, Townsend, Norfolk: Corn has eared well and ripened well, but the acreage is very small. On account of the cold, wet spring much of the seed rotted, and the land was ploughed up for other crops, etc.

V. Honsberger, South Cayuga, Haldimand: Corn was injured by cold, wet weather in spring.

James McClive, Bertie, Welland: Corn is a decided failure; three-fourths of all that was planted rotted at seeding time, and the other one-fourth is full of weeds, and there will only be one-half or one-third of a crop.

F. A. Hutt, Stamford, Welland: I believe corn has been most generally ripened by the prolonged fine weather in October.

D. G. Holcomb, Thorold, Welland: Corn in the early part of the season was considered a failure, the weather being cold and wet; August and September being favorable, it is a very good crop.

J. W. Overholt, Wainfleet, Welland: Corn has a very poor stand, but has all ripened.

Martin Wattson, Bosanquet, Lambton: Some very good on light soil, but very poor on clay lands lying low and undrained.

James Lovell, Brooke, Lambton: Corn has come on much better than was expected. The fall has been very favourable for it.

Andrew Childs, Dawn, Lambton: Corn in most instances succeeded better than was expected in the early part of the season, but only in a few cases was a fair crop obtained.

John Morrison, Plympton, Lambton: The corn crop turned out much better than early indications gave promise of. There being no fall frost to injure it, the crop was cut in fine condition.

Walter Hick, Goderich, Huron: Very little corn grown, and on account of the cold, late season it did not ripen, and was very much rusted.

John Scott, Howick, Huron: Scarcely any grown except for green corn. Had it been planted as a crop it would have done well.

W. W. Revington, Biddulph, Middlesex: On account of the cold, wet season, corn did not fill well and was very late in coming in—a full month later than other years.

J. M. Kaiser, Delaware, Middlesex: The fine weather in the latter part of September helped the corn greatly.

Malcolm Campbell, Ekfrid, Middlesex: Corn had a serious drawback early in the season by cold weather, grubs and bad seeds.

R. A. Brown, West Nissouri, Middlesex: The spring was too cold and wet for corn, but in July and August it came on remarkably well, and where planted on light, rich soil, and properly cleaned and cultivated, will reach as high as one hundred bushels per acre in the ear. But like everything else, "no manure, no crops." With bad tillage, and on low, wet, sour land, it is short and not much good.

James A. Glen, Westminster, Middlesex: Corn is a fair crop, from a fodder standpoint, but did not ripen properly. The season was too short for it.

Thomas Baird, Blandford, Oxford: Corn will be good on dry, warm soils, but where the land was clay and wet it will not be of much account.

James G. Pettit, East Oxford, Oxford: Corn was injured to the extent of fifty per cent. by cold, rainy weather in the early part of the season.

Thomas A. Good, Brantford, Brant: Corn was kept back by rain and cold all summer, and a good deal was cut before it was fully ripe in order to save it from frost.

Thomas Dunn, Oakland, Brant: Several fields were ploughed up, not having come up well on account of poor seed and cold, wet rains. Where good seed was planted a very good crop has been harvested, this fall having been very favourable.

John Secord, Grantham, Lincoln: A much better crop than was expected two months ago.

James Stull, Grantham, Lincoln: Corn is very poor. The fall was favourable for the late crop; there was no frost until the 15th of October.

A. G. Muir, North Grimsby, Lincoln: A great quantity of corn did not get ripe.

Robert Shearer, Niagara, Lincoln: Owing to the hot weather of the last half of September corn ripened well, but very little is husked yet.

T. A. Walker, Ancaster, Wentworth: Hardly ripe when cut; too cool and wet.

E. D. Smith, Saltfleet, Wentworth: The corn was all cut before the frost came. The first frost was on October 24th. The crop is very fair—what was left; much was ploughed up in the spring.

Platt Hinman, Haldimand, Northumberland: Not worth husking, but good fodder.

Walter Riddell, Hamilton, Northumberland: Hardly any ripened well except where early planted. It formed for a large crop, but the weather was not favourable to ripening. The severe storm in August laid the corn, and the frost damaged it a good deal.

Louis P. Hubbs, Hillier, Prince Edward: A poor crop. It was mostly cut before frost came, but some late stalks were hurt.

C. R. Allison, South Fredericksburgh, Lennox: Corn was sparsely grown in consequence of the wet, cold spring, as well as being a partial failure for the past two seasons in not ripening before the frost took it. There are many fine fields this year, and they ripened well.

S. Chalmers, Wolford, Grenville: The cold summer, wet and frost have left the corn not worth husking; we are feeding it without.

John Ferguson, Wolford, Grenville: Corn will be better than was expected some time since. It was not injured by frost, but a large percentage (say fifty per cent.) is too late to ripen.

Wm. Kyle, Williamsburg, Dundas: Very little corn planted here, but largely sown for green fodder; it is a comparative failure this season in consequence of the wet spring.

James Cattanach, Lancaster, Glengarry: Corn has been seriously injured by cold and wet weather; half the seed failed to grow.

E. R. Macphee, Radcliff and Raglan, Renfrew: Very little corn is grown here. Farmers seem afraid to risk it as a crop, though the writer's experience has been that if planted in time and duly cultivated it is quite safe.

Thomas Smithson, Fenelon, Victoria: Very little planted except in garden patches, and most of that did not ripen on account of wet, cold summer, and early frost.

BUCKWHEAT.

Although like other grain crops buckwheat has been subject to the adversities of the season, it appears to have survived them quite successfully. There are reports from various localities of injuries by rain and frost, and in one or two instances by storms beating down the straw, but the sum of these mischiefs is slight. The injury from frost

has been confined almost wholly to fields which were sown late. The quality of the grain is unexceptionable, and, as the following table shows, the yield was more satisfactory than in the previous year.

Districts.	1885		1884		Bush. per acre	
	Acres.	Bush.	Acres.	Bush.	1885.	1884.
Lake Erie	10,136	228,284	10,615	224,066	22.5	21.1
Lake Huron	1,021	21,678	895	22,593	21.2	25.2
Georgian Bay	598	11,960	584	9,800	20.0	16.8
West Midland	2,336	49,325	2,673	62,338	21.1	23.3
Lake Ontario	13,981	343,057	14,291	326,209	24.5	22.8
St. Lawrence & Ottawa	28,015	746,782	31,414	722,462	26.7	23.0
East Midland	5,131	117,804	4,679	98,068	23.0	21.0
Northern Districts	558	11,785	685	19,034	21.1	27.8
Totals	61,776	1,530,675	65,836	1,484,570	24.8	22.5

FROM THE NOVEMBER REPORT.

Arthur J. Arner, Gosfield, Essex: Buckwheat is but little grown. What I saw seemed light, but well ripened.

John Haggan, Malahide, Elgin: Buckwheat an extra crop and harvested without damage.

Charles Chute, Malahide, Elgin: Buckwheat good, but little grown in this locality, as it is considered only a crop for poor land.

John H. Hauser, Canborough, Haldimand: Buckwheat badly damaged by rain; it was beaten down and we could hardly gather it.

R. Fleck, Moore, Lambton: Never saw better buckwheat.

Joseph Martin, Medonte, Simcoe: Injured by early frosts; some never cut or havested.

Alexander Bryce, Brantford, Brant: A splendid crop; dry when taken in.

Thomas Dunn, Oakland, Brant: The bulk of the crop is in the field and badly damaged by rain.

A. G. Muir, North Grimsby, Lincoln: More than an average acreage and yield.

Louis P. Hubbs, Hillier, Prince Edward: An unusually good crop and harvested in good condition.

C. R. Allison, South Fredericksburgh, Lennox: Well loaded but straw short.

W. J. Summerby, Russell, Russell: Somewhat damaged by frost, but a fair sample.

William Selkirk, Petewawa, Renfrew: Buckwheat was hurt some by the frost, which caused a great deal of loss in harvesting, for it shelled out in the handling.

John Fell, Somerville, Victoria: Completely destroyed by frosts.

A. R. Kidd, Dummer, Peterborough: The little buckwheat that was raised here was all frozen.

Edward Bray, Stephenson and Stisted, Muskoka: Hardly worth cutting owing to frost.

SORGHUM.

It is only in western Ontario that any serious attempt has been made to cultivate this plant, and even there the experiment cannot be said to be proving very successful. In Essex and Kent sorghum is pretty extensively grown, but in most other counties where it has been tried the farmers are giving it up. The reports for last year are on the whole favourable, although the cane ripened late and in a few instances it was touched by frost.

FROM THE NOVEMBER REPORT.

Robert Cumming, Harwich, Kent: Sorghum is grown quite extensively.

Samuel Russell, Orford, Kent: Sorghum is not very good. I have a mill, and made up to last evening 1075 imperial gallons. I manufactured last year 1685 gallons. The seed has not ripened this season.

C. A. O'Malley, Aldborough and Mosa, Elgin and Middlesex: Sorghum grew very slowly, did not mature seed, and was slightly nipped by frost.

C. H. Kitchen, Townsend, Norfolk: Very little sorghum raised in this locality of late years.

Thomas Baird, Blandford, Oxford: Sorghum has not been so much sown this year as formerly. What was sown will be of little use, being too late.

James Anderson, East Zorra, Oxford: Played out.

W. C. Smith, Wilmot, Waterloo: Sorghum appears to be a failure. There has been one good crop out of four. This year was too cold and wet; it did not contain enough of saccharine matter. Our factory only worked two or three days. It is a great loss to those who fit up machinery to make molasses out of sorghum.

Wm. Armstrong, Otonabee, Peterborough: There was some sorghum sown here, but it did not come to perfection. We are rather too far north for its cultivation.

HAY AND CLOVER.

The hay crop was on the whole a fair one in point of yield per acre, and in the quality of the product, as harvested and secured, it was above the average. On old meadows, and especially on low and heavy soils, there was considerable damage from winter and spring frosts, which heaved out the plants and left the fields thin and uneven. Newly seeded fields escaped comparatively well from this casualty, and under the influence of frequent showers and warm sunshine they presented a good appearance when the time of hay harvest arrived. Timothy was a good crop, though unusually late in getting its growth and coming to maturity: indeed the backwardness of the season at the opening put haying operations from one to two weeks behind the usual date. The weather during the main part of the haying season was exceptionally favourable. A few of the earlier cut fields were injured by the rain of July 12th and 13th, but cutting did not become general till after the time, and there were no latter storms worth speaking of till the hay crop in all except the extreme northern districts was safely housed. The statistics of the crop for 1884 and 1885 are presented in the following table:

	1885.		1884.		Tons per acre.	
Districts.	Acres.	Tons.	Acres.	Tons.	1885.	1884.
Lake Erie	280,932	440,979	271,690	436,517	1.57	1.61
Lake Huron	227,501	334,176	220,239	294,902	1.47	1.34
Georgian Bay	190,593	216,109	181,877	240,119	1.13	1.32
West Midland	412,287	656,882	395,809	629,716	1.59	1.59
Lake Ontario	417,086	618,958	412,689	603,359	1.48	1.46
St. Lawrence & Ottawa.	542,888	749,969	521,766	614,509	1.38	1.18
East Midland	156,080	189,908	151,379	180,642	1.22	1.19
Northern Districts	40,724	45,174	37,920	45,148	1.11	1.19
Totals	2,268,091	3,252,155	2,193,369	3,044,912	1.43	1.39

As will be seen under the head of values, this was the most valuable crop of the year.

CLOVER SEED.

The midge wrought sad havoc with the seed clover. The first brood of the insect, which developes in June, was very destructive in the early fields, and the August report of the Bureau expressed a general fear that "nothing will save the seed crop from serious damage, if not complete destruction, by the second brood of this pest, which usually comes out in August." The event shows this alarm to have been fully justified. In the eastern and northern sections of the province scarcely any attempt is made to grow clover for seed; but throughout south-western and central Ontario, which is the habitat of this crop, widespread and sometimes total failure from the ravages of the midge forms the tenor of the reports. The lateness of the haying season, followed by a period of dry weather, rendered the second crop of clover all the more open to the attacks of its enemy. Many correspondents also report that the extreme moisture of the latter part of the summer stimulated too rank a growth, which was against successful blossoming and the healthy maturing of seed. Occasionally, however, a quite favourable report relieves the darkness of the picture. There is a remarkable concurrence of testimony from experienced farmers that a yield of clover seed can no longer be depended upon with any degree of certainty where two crops are cut in the season. Almost ever instance of failure has been in the case of the second crop. Wherever the clover fields were pastured until the beginning or middle of June, and then left to grow for seed, fairly successful results have been obtained. The crop becomes so well advanced by the time the August brood of the midge appears as

to be pretty secure from its attacks. This fact, which has been referred to in previous reports of the Bureau, cannot be too strongly emphasized, and it affords a good reason why farmers need not abandon wholly the attempt to raise clover seed, as many of them are doing. It is to this practice, so far as it has been attended to, that we are indebted for even the small yield of seed we had last year. Alsike, wherever grown, is reported to have been in every way successful, unaffected either by the midge or any other adverse influence. In some of the Lake Erie counties the grasshopers joined their forces to those of the midge, and did considerable damage, but there has been, happily, an almost entire absence of injurious frosts.

FROM THE AUGUST REPORT.

C. Darling, Howard, Kent: Hay was a good crop and was well secured.

W. Y. Emery, Bayham, Elgin: There was a fair average crop of hay; say, one and a half tons per acre. Haying weather was fine, and the crop was secured in first-class condition.

G. E. Fitzgerald, Rainham, Haldimand: Clover on old meadows was frozen to death in winter.

John H. Houser, Canborough, Haldimand: Hay crop good, uninjured by drought or frost, and saved in first-class order. Alsike clover is well filled.

John A. Ramsden, Humberstone, Welland: The hay crop was good in this locality. The clover that was pastured in the beginning of the season, and afterwards allowed to grow for seed, looks well.

John McFarlane, Sarnia, Lambton: Hay crop very good; no frost or drought to hurt it, and there was good weather for haying.

George Dewar, Plympton, Lambton: Hay and clover were both good crops, and were secured in good condition.

Henry Doupe, Usborne, Huron: Hay and clover a pretty fair crop, and secured in good condition.

Samuel Platt, Colborne, Huron: Hay crop excellent and saved without injury; prospect of seed not very good on account of the very dry weather.

John Douglas, Arran, Grey: Hay crop was damaged considerably by frost in spring and drought afterwards. Weather during haying was fine, and crop secured in first-class order.

C. Julyan, Sarawak, Grey: Drought and frost early in the season hurt the crop somewhat, but copious showers in the latter part of June revived it very much, making the yield a full average one.

George Binnie, Glenelg, Grey: On an average hay was perhaps somewhat lighter than usual, though there were some very good meadows. Cold, wet weather early in spring and frosts in June injured it to some extent. The haying season was rather late, commencing about the middle of July. Weather was favourable, and the crop has been secured in splendid condition.

Michael Coyle, Sunnidale, Simcoe: Hay has been an extra light crop here, on account of the hard frost and too much rain in the spring; haying weather pretty good.

George Sneath, Vespra, Simcoe: Yield of clover and timothy somewhat diminished by late spring frosts, which checked the growth. The weather for haymaking has been very favourable, and the crop is secured in good condition.

Thomas Beckton, Ekfrid, Middlesex: Timothy hay will average two tons per acre.

Wm. Douglas, Onondaga, Brant: The quality of the hay crop was very good, and it was secured in good order.

Charles Nicklin, Pilkington, Wellington: Meadows in their first year were very good, yielding from two to three tons per acre; other cuttings light; most of the hay secured in good condition.

Henry Liersch, Wilmot, Waterloo: Hay good and mostly well housed; timothy seed likely to be plentiful and of good quality.

Joseph Watts, Grimsby, Lincoln: Bulk of hay secured in fine order: large quantity of Alsike clover left for seed, and it is well loaded.

Daniel McLaren, Nelson, Halton: Hay crop good; early cuttings impaired by rain, but later the weather was fine and a great deal was secured in prime condition.

Archibald McKinnon, Caledon, Peel: Spring frosts killed the clover, but there was a good crop of timothy.

M. Jones, Whitchurch, York: Quality of hay crop from fair to good; frost and cold spring weather damaged the timothy very seriously, but new meadows were good. Early cut hay was damaged by rainy weather; that which was later cut was secured in first-class order. Alsike clover will produce a fair crop of seed.

John Moore, Sophiasburg, Prince Edward: Old meadows were much hurt by the winter and spring frosts.

Fred. Membery, Adolphustown, Lennox: Hay crop very large, but more than half spoiled in harvesting by heavy rains.

Thomas Briggs, Kingston, Frontenac: Hay and clover crops are good; no injury done during winter.

A. Harkness, Matilda, Dundas: Meadows are winter-killed in spots, but the weather was favourable during the whole of the growing season. It has been so wet during haying season that fields are soft in low places, and operations have been delayed and the hay injured.

P. Gareau, Plantagenet, Prescott: Hay about two-thirds of a crop; injured by cold and drought at beginning of the season; clover killed by winter frost.

W. O. Riddle, March, Carleton: We have no clover at all; the frost in spring and drought in June killed it.

Amos Hawkins, Eldon, Victoria: A medium hay crop; rather badly hurt by spring frosts; secured in splendid condition. For seed, Alsike will give the best yield for years.

J. M. Drummond, Otonabee, Peterboro': Hay a fair crop, and the bulk of it was secured in good condition. Clover that was pastured and turned off from the 15th to the 20th of June made a good growth, and the heads are well filled with plump seed, but the weevil is hard at work in it, and there will be nothing on what was mowed even as early as the 20th of June.

John H. Delamere, Minden, Haliburton: Hay crop very light; both grass and clover roots badly killed out by the extra severe weather in winter and early spring. Clover has been so badly killed out that there will be little if any seed raised here.

James D. Smith, McLean, Muskoka: The grass was damaged and killed in the spring in low lying places; weather splendid and hay secured in good condition; very little clover seed is raised here; there has been a large quantity of Hungarian grass grown on account of shortage in hay crop.

FROM THE NOVEMBER REPORT.

The following extracts refer exclusively to the crop of clover for seed:

Arthur J. Arner, Gosfield, Essex: The clover crop is in a most pitiable condition, the great majority of the fields being almost a total failure. The grasshoppers did the greatest damage by far.

W. G. Moore, Mersea, Essex: Clover for seed has ripened very unevenly. Much was not more than half ripe when frost came.

A. J. C. Shaw, Camden, Kent: Grasshoppers and insects nearly cleaned out the seed crop. Many farmers never had any.

George Green, Chatham, Kent: Not very good, as the hay was taken off so late the seed had not time to mature: but where it was pastured it is good.

James Macfarlane, Dover, Kent: I had less than a bushel per acre. Neither frost nor midge seem to blame. Clover threshing machines are standing idle.

Robert Cumming, Harwich, Kent: It is scarcely worth harvesting. The midge was its greatest enemy.

F. B. Stewart, Raleigh, Kent: Much better than anticipated—seed an excellent sample. Some small patches of late growth were caught with frost; no midge.

R. H. Waddell, Tilbury East, Kent: The crop of clover for seed grew rapidly at first, but in some instances was laid flat by heavy rains. Then a second crop came up, which of course did not mature, being checked by frost. Owing to showery weather, much of it is still lying in the fields.

John McLean, Aldborough, Elgin: There will be no seed, except in fields that were pastured till the middle of June. The midge eats out all the clover that is cut for hay and left for seed.

John L. Sherk, South Dorchester, Elgin: Clover is good where it was pastured till about the middle of June; but where it was cut for hay the second crop is a complete failure on account of the midge.

C. H. Kitchen, Townsend, Norfolk: The clover midge of late years is so sure to take our clover seed that we do not try to raise it, but pasture the second growth and buy our seed from other parts. Some farmers mow or pasture till the tenth of June, and get a crop of seed between the two regular attacks of the midge.

Joseph Martindale, Oneida, Haldimand: Very little clover was saved for seed, but what was saved yielded a good crop and a good sample.

James McClive, Bertie, Welland: The second crop of clover is a failure, caused by a dry spell just after cutting the first crop, and the yield may not be over one-fourth of what usually was considered a fair crop.

Martin Wattson, Bosanquet, Lambton: Varies very much. Where pastured with sheep up to June, very good, preventing the appearance of the second brood of midge. This neglected, it is not worth threshing, and is better fed to cattle.

John Morrison, Plympton, Lambton: The harvest rains brought forward such a vigorous growth of clover that very little of it matured for seed.

A. A. Meyers, Sombra, Lambton: The clover crop for seed is almost a total failure here. Large fields failed to blossom. The midge does not appear to be the cause of the failure.

Robert Currie, East Wawanosh, Huron: We have not had any seed for three years in this part of the country; damaged by midge.

Peter Corrigan, Kinloss, Bruce: The farmers in this section have given up raising seed on account of the midge.

John Lennox, Innisfil, Simcoe: The only clover seed we can get is to pasture till the middle of June, and cut for seed in the beginning of September. We cannot get seed after a crop of hay, as the midge eats it all.

J. M. Kaiser, Delaware, Middlesex: Fields that were mown for hay in July were worthless for seed, the midge having destroyed it all. Fields that were pastured until from the 12th to the 20th of June will have some seed, probably from two to three bushels per acre.

Richard Jolliffe, North Dorchester, Middlesex: Clover, as in the past three years, does not promise a yield of over half a crop—from what cause I cannot say. I don't think the failure is altogether caused by the midge.

R. A. Brown, West Nissouri, Middlesex: Where it was pastured till the first week or two in June, and then has taken its chances, with a good rich bed to feed from, it is above what it has been for years—nothing has affected it in any way; but clover late cut or on poor land is affected by midge, and nearly all eaten up.

E. H. Brown, East Nissouri, Oxford: The season was so backward that the second growth was too late for use for seed.

M. W. Schell, East Oxford, Oxford: Owing to frequent rains it did not mature, and was therefore cut for hay.

Alexander Martin, Downie, Perth: The grass was heavy, but seed poor.

Robert Shearer, Niagara, Lincoln: The midge was so bad in the spring crop that everybody pastured the second crop.

Robert Inksetter, Beverley, Wentworth: We have had to give up raising clover seed on account of the midge.

R. Postans, Trafalgar, Halton: A great deal of the red clover crop never bloomed on account of the midge. Farmers should examine their clover seed very closely. Through sowing some foul seed, though apparently clean, I have had twelve acres seeded badly with wild flax.

John Sinclair, Chinguacousy, Peel: The midge ruined all fields except those pastured till the 10th of June.

Peter McLeod, Chinguacousy, Peel: Alsike clover for seed was an exceptionally good crop. No red clover for seed was grown in the vicinity, that I am aware of.

N. A. Malloy, Vaughan, York: Where pastured till the middle of June or cut at that time, a fair crop; of no account elsewhere, being damaged by the midge.

Henry Glendenning, Brock, Ontario: The damage caused by the midge for the last two or three years has made the farmers turn their attention to pasturing their clover fields, instead of trying to grow seed after taking off a crop of hay.

John Foy, Scugog, Ontario: The midge has ruined the business of raising clover seed.

A. Wiancko, Morrison, Muskoka: We do not raise clover for seed for the want of a thresher, although so far it is free from insect enemies and comes to perfection.

Robert F. Ogle, Carnarvon, Algoma: I have only seen a sample of clover seed exhibited at our agricultural show, which was very good. There is but very little grown here, although it turns out very well whenever tried.

ROOTS.

Though a few localities complained of drought and hot weather, the August reports generally referred to the potato crop as being unusually promising in appearance. In some places, and particularly in the Lake Erie district, the earlier plantings were set back by the dry weather which prevailed in the beginning of the season; but the main part of the crop was more fortunate in having the benefit of frequent showers during the summer. The old enemy of the potato—the Colorado beetle—appeared as numerously as ever; indeed some correspondents say they never saw this pest in such numbers before; but the prompt application of Paris green was found sufficient to prevent any serious injury. Many potato growers, however, neglected to give timely attention to this matter, and the voracious beetle made havoc in their fields. But a worse enemy than the beetle was awaiting the crop, and one that has caused widespread destruction. The frequent heavy rainfalls that prevailed during the latter portion of the summer, while promoting a remarkably abundant growth of tubers, also developed the dreaded "potato rot" to a very fatal degree.* Throughout the whole southern belt of the Province, extending from the

* A valuable paper on the Cause and Remedy of the Potato Rot, by J. Hoyes Panton, M.A., Professor of Natural History at the Ontario Agricultural College, has been furnished by the Department of Agriculture for publication in the newspapers of the Province. The most important portion of that paper is reproduced here.

Cause.—This disease has received a great deal of attention from botanists since the days when it became a scourge in Ireland and other parts of the British Isles, and is now conceded to be the result of a minute

Detroit river on the west to the Ottawa on the east, and including the greater part of the West Midland and East Midland districts, scarcely a farm escaped the visitation. In many cases from one-half to three-fourths of the crop was destroyed, and in not a few fields the proportion of sound potatoes was so insignificant that the farmers did not take the trouble to gather them. Nor did the rot confine its ravages to the fields: in the pits and cellars its deadly work went on, many correspondents say worse than before. In the belt described it is only where the soil is particularly light, dry, and sandy, or where the potatoes were planted very early in the season and had become pretty mature before the excessive rains of August came, that even a small yield has been obtained. It is reassuring, however, to find that the northern latitudes of the province, both east and west, have been comparatively free from the disease. Bruce, Grey, Simcoe, Haliburton, Renfrew, and many of the contiguous townships to the south, as well as Parry Sound, Muskoka and Algoma, report enormous crops of generally large, sound, healthy potatoes: indeed in many of these northern localities the rot was not even heard of. From the districts named the potato supply of the Province, both for consumption and this year's seed, must be almost wholly drawn—especially as the disease has also extended over the

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fungus called *Phytophthora infestans*. This attacks all parts of the plant—leaf, stem and tubers. By those ignorant of the life history of this tiny parasitic plant little attention is paid to its appearance on the tops, and no alarm is experienced until the potatoes are affected. But being very contagious, its presence on the leaves should become a serious matter, especially when we remember that it spreads with great rapidity. It is usually indicated by the tops presenting a blotched, brownish, spotted, dead appearance. A close examination of the potatoes showing this will discover innumerable slender stems growing up out of the surface of the leaves and stems of the affected plants. These branch and swell out at the ends into pear-shaped minute bodies (spores), which are produced by millions. When ripe they separate from the stem and being exceedingly light pass into the atmosphere, where they are wafted about, many of them finally reaching the ground or settling upon plants. Under favourable conditions of moisture and heat the contents of a microscopic spore may push out a long minute tube, which can penetrate into any part of the potato plant and give rise to the fungus; or may separate into several distinct portions (swarm spores) which burst through the spore-wall and become the source of the parasitic plant. The mature plant which lives in the tops and tubers is very minute, and can be seen only by the aid of the microscope. It consists of many colourless, branching, thread-like structures. These penetrate the tissues of the potato and feed upon the juices, so that it soon weakens and begins to waste away. From the thread-like structures tiny stalks arise, assuming beautiful plant-like forms and bearing upon their branches the spores already referred to. They live but a short time, but the thread-like structure is perennial and hardy, and from fragments of it new fungi may arise. It is said by some that another kind of spore is produced which can winter, and thus give rise to the organism in another season. These are the so-called resting spores, apparently for the purpose of keeping the species over certain periods, while the spores already considered are produced rapidly so as to hasten the spread of the fungus under favourable conditions. This minute microscopic plant is certainly a low form of vegetable life, incapable of manufacturing food from the mineral kingdom, but fastening upon other plants and feeding upon their juices. A wet season supplies conditions well adapted for its development, and hence we find the "rot" associated with such weather. There is no doubt that many spores are always more or less present, but they are prevented from being a source of trouble because the weather is not suited for their growth.

Remedies.—The "rot" usually appears about the first two weeks in August, and if the weather is favourable its spread is very rapid, for as soon as the thread-like structure which arises from the spore is developed it immediately becomes spore-bearing. Hence the importance of examining the plants for the appearance of the brownish spots that indicate the presence of the fungus.

1. As soon as discovered, dig the potatoes. Delay will allow it to spread to the stems, and thence to the tubers. If it reaches these and damp weather comes, "rot" will certainly appear.
2. After digging, the potatoes should be put in a cool place, thus surrounding them with conditions unfavourable for the growth of the fungus, if any happens to be upon them.
3. Growing early varieties is worthy of consideration, so that they may mature before the season arrives when this parasite is likely to affect the crop.
4. All potato stalks in affected lands should be gathered and burned, so as to destroy the millions of spores which may be upon them.
5. Use none but good seed. If at all affected, reject them; and plant in well-drained land. If the potatoes to be used for seed have been taken from cellars where affected ones were kept, they are likely to have the microscopic spores on them and escape notice. It would be best to get seed from unaffected districts.
6. It is scarcely necessary to remark that it would be injudicious to plant potatoes in the same field the following year after a visitation of the "rot," inasmuch as the ground may retain the germs of the disease.
7. Avoid planting upon heavy clay soil, but prefer a light and dry soil. This presents the fewest conditions suitable for the growth of the fungus.

The nature of our climate is not so favourable for the development of this injurious fungus as that of Britain: yet as we are sometimes visited by it, and although scarcely viewed as a scourge, it is well that we should remember its nature and habits and always be ready to guard against failure if it appears. As last summer was favourable for its propagation, great care should be exercised in the selection of seed this spring.

Northern States from Maine to Minnesota. The statistics of the crop are presented in the following table:

Districts.	1885. Acres.	1885. Bush.	1884. Acres.	1884. Bush.	Bush. per acre. 1885.	Bush. per acre. 1884.
Lake Erie	17,346	1,539,992	20,385	3,097,476	88.8	151.9
Lake Huron	13,491	2,168,126	13,839	1,785,709	160.7	129.0
Georgian Bay	14,350	2,687,939	14,401	2,086,426	187.3	144.9
West Midland	28,263	3,127,374	29,529	4,938,117	110.7	167.2
Lake Ontario	31,016	3,405,194	34,225	5,764,329	109.8	168.4
St. Lawrence and Ottawa	40,736	6,107,611	40,805	7,361,402	149.9	180.4
East Midland	11,821	1,651,143	12,665	2,024,062	139.7	159.8
Northern Districts	2,718	403,765	2,908	488,740	148.6	168.1
Total	159,741	21,091,144	168,757	27,546,261	132.0	163.2

The first reports of the turnip crop were not very promising, taking the Province as a whole. The fly seems to have been exceptionally persistent in its attacks, and there was not sufficient rain immediately after sowing to give the young plants a proper start. Even the plan generally adopted of resowing at a later period in the hope of ultimately escaping the fly did not generally succeed, and the result was that many fields set apart for turnips had to be devoted to fallow for wheat in the fall. A gratifying exception to this discouraging condition of things, however, was found in portions of the great turnip growing counties of Wellington and Waterloo, where the fly was less troublesome, and there was less moisture. The reports from the corresponding root-growing area of the eastern part of the Province—the county of Ontario—showed that there the crop suffered much from the ravages of the fly. But in spite of these drawbacks in the early stages of growth the crop turned out on the whole to be a very satisfactory one, though not equal to the crop of the former year. The root was rather small in size, but the fine open weather of the fall favoured its maturity and added something to its growth. Following are the figures of area and produce for the years 1884-1885:

Districts.	1885. Acres.	1885. Bush.	1884. Acres.	1884. Bush.	Bush. per Acre. 1885.	Bush. per Acre. 1884.
Lake Erie	1,664	668,325	2,377	831,498	401.6	349.8
Lake Huron	12,739	5,933,288	14,434	4,897,740	465.7	339.3
Georgian Bay	12,154	5,503,918	12,646	5,479,443	452.8	433.3
West Midland	35,131	13,210,389	35,824	16,269,334	376.0	454.1
Lake Ontario	28,525	11,973,449	27,997	12,980,874	419.8	463.7
St. Lawrence and Ottawa	3,832	1,371,476	4,230	1,486,136	357.9	351.3
East Midland	5,775	1,791,547	4,042	1,578,325	310.2	390.5
Northern Districts	2,483	685,343	2,649	883,013	276.0	333.3
Totals	102,303	41,137,735	104,199	44,406,363	402.1	426.2

Mangel-wurzels are not extensively grown, though one or two correspondents say they are superseding turnips in their particular localities. The reports were uniformly favourable; and although, as will be seen from the following table, the area in crop was not so large last year as in 1884, the average yield was very nearly as good:

Districts.	1885. Acres.	1885. Bush.	1884. Acres.	1884. Bush.	Bush. per Acre. 1885.	Bush. per Acre. 1884.
Lake Erie	1,215	564,603	1,307	547,575	464.2	418.9
Lake Huron	1,827	896,933	2,365	1,024,583	490.9	433.2
Georgian Bay	973	448,248	1,010	510,644	460.7	505.6
West Midland	5,370	2,490,285	5,682	2,892,902	463.7	509.1
Lake Ontario	4,809	2,315,051	5,118	2,487,032	481.4	485.9
St. Lawrence and Ottawa	1,399	580,938	1,657	686,656	415.3	414.3
East Midland	781	347,648	1,143	483,809	445.1	423.3
Northern Districts	61	17,623	59	21,983	288.9	372.6
Totals	16,435	7,660,729	18,341	8,655,184	466.1	471.9

The cultivation of carrots is confined principally to market gardens, and occasional patches of the White Belgian variety for stock-feeding. These roots were attacked by grasshoppers in some localities early in the season, but the fall was favourable for recovery

and growth, and on the whole the crop was fully equal to the previous year's. Following are the comparative statistics :

Districts.	1885		1884		Bush. per Acre.	
	Acres.	Bush.	Acres.	Bush.	1885	1884
Lake Erie	610	218,209	708	209,519	357.7	295.9
Lake Huron	767	344,559	1,213	434,970	455.2	358.6
Georgian Bay	1,079	435,088	1,273	521,307	403.2	409.5
West Middlesex	1,985	736,333	2,504	977,926	370.9	309.5
Lake Ontario	2,476	1,019,168	3,010	1,235,421	411.6	410.4
St. Lawrence and Ottawa	1,184	387,886	1,470	533,365	327.6	362.8
East Midland	797	285,089	685	242,632	357.7	354.2
Northern Districts	136	35,987	124	42,060	264.6	339.2
Totals	9,024	3,462,319	10,987	4,197,200	383.7	382.0

The harvest weather for roots was settled, mild, and in every way favourable to gathering and securing the crops in good condition for the winter.

FROM THE AUGUST REPORT.

D. R. Davis, North Colchester, Essex : Potatoes are splendid ; bugs appeared, but a little care at the start prevents serious damage ; other roots not extensively grown.

Lawrence Tape, Orford, Kent : Potatoes looking pretty well except where damaged by bugs ; about one-third of the crop appears to be eaten by them. Turnips are small as yet. Mangels and carrots are looking well, and I think they will be an average crop.

Peter Stalker, Aldborough, Elgin : Potatoes are not as large in the tops as usual—caused, I think, by lack of rain and the ravages of bugs ; never had bugs in such numbers. Turnips are not raised to any extent in this locality, but what I see look well.

John L. Sherk, South Dorchester, Elgin : Potatoes look well ; not many turnips grown ; mangels and carrots are late, but look well ; think they will be an average crop.

Charles Walker, North Cayuga, Haldimand : Potatoes promise half a crop ; hurt by the bug and dry weather ; other roots nearly a failure from drought.

John H. Houser, Canborough, Haldimand : Potatoes will not be a third of a crop ; bugs are worse this year than ever were known, and there has been lack of rain. There will be no turnips on account of the fly. Mangels and carrots will be a fair crop, but not so good as last year owing to dry weather.

F. A. Hutt, Stamford, Welland : The root crop is looking well The rain of last week has given turnips and mangels quite a fresh appearance, and late potatoes have also been greatly benefitted by recent showers.

John A. Ramsden, Humberstone, Welland : Potatoes, mangels and carrots look well, but the fly has entirely destroyed some fields of turnips.

George M. Everest, Plympton, Lambton : Roots will be excellent — above an average, excepting Swedes, which will be small in this section on account of the fly.

James Lovell, Brooke, Lambton : Potatoes have the appearance of being a rather light crop—certainly nothing like equal to that of last year, which was very abundant. A good many growers are careless this season, and are not giving them proper attention, so that they are being greatly injured by the bug.

Malcolm McDonald, West Wawanosh, Huron : Potatoes look fairly well ; turnips a failure on account of fly ; mangels and carrots look well, but all roots are a little backward on account of the hot, dry weather of the last two weeks.

G. E. Cresswell, Tuckersmith, Huron : Potatoes look better than they have done for several years, and there is every indication of a large yield. More than one-half of the turnips ploughed down on account of the fly. Mangels a good crop ; carrots look fairly well.

James Tolton, Brant, Bruce : Potatoes promise to be good, but there are a good many bugs. Turnips will be a good crop where put in properly. At the time of sowing the weather was very dry and the fly attacked the plants, but recently we have had abundant rains, which almost ensure the root crop. Carrots and mangels not much grown.

Peter Clark, Culross, Bruce : Potatoes doing well ; comparatively free from bugs. Season too dry for turnips, and the young plants have suffered much from the fly.

Wm. Lang, Sydenham, Grey : Potatoes and carrots are good, but the turnip crop is almost a complete failure on account of the fly. Not many mangels grown here, but what there are look well.

John Cameron, Holland, Grey : Great prospects for potatoes. Where turnip fields were fortunate to have escaped the fly they promise well, but a good many were sown two or three times over and did not escape.

Geo. Binnie, Glenelg, Grey : Potatoes growing well ; bugs are as bad as ever and eternal vigilance is the price of a good crop. Turnips have suffered badly from the fly ; some scarcely worth thinning, and some will be ploughed up. Mangels and carrots good ; in some localities mangels were cut at the root by a grub.

Geo. Smith, Vespra, Simcoe: The frequent rains we have been favoured with during the summer have been the making of the root crop, turnips excepted. Potatoes in particular promise to be a heavy crop. The bug has been far less troublesome than usual. Mangels and carrots are doing well and promise to yield heavily. The fly has destroyed the turnip crop; a good many farmers, after two or three sowings, have given them up in disgust.

Chas. J. Fox, Delaware, Middlesex: Potato crop fine where protected from the ravages of beetles, which are more numerous than ever. There are hardly any turnips sown; mangels are largely taking their place and are looking well. Carrots not largely grown.

John Henderson, East Nissouri, Oxford: Potatoes will be a splendid crop where the bugs were kept off. I never saw the bugs so numerous as this year. Turnips are a complete failure, the fly having eaten off both those that were sown early and those that were sown late.

Fred. Axon, Onondaga, Brant: Grasshoppers are eating the carrots very badly, never heard of the like before: potatoes, turnips and mangels very good.

R. Ballantyne, Downie, Perth: The fly has been worse on turnips this year than I have ever seen it before.

Prof. Brown, Guelph: Mangels and turnips look well: turnips were considerably damaged by fly. Much moisture is favouring roots.

James Cross, Peel, Wellington: Root crops look well now: potatoes, turnips and mangels promise good crops, and carrots also appear good. At present no insect except the potato bug appears to have injured them.

James Wilson, North Dumfries, Waterloo: Potatoes promise to be a good crop; turnips brairded very nicely, but since thinning they have not done so well; the fly was also numerous and injurious. Potato bugs have been, if anything, thicker than ever.

Richard Blair, North Dumfries, Waterloo: Prospects good for both turnips and mangels.

Isaac A. Merritt, South Grimsby, Lincoln: Potatoes bid fair to be a medium crop, though the bugs have been quite numerous. Turnips are doing very well; on light soils they have been injured to some extent by the fly.

Wm. McDonald, Esquesing, Halton: Root crops in this section look well. Potatoes, generally, have a large top and promise an abundant yield. Bugs were as numerous as ever, but a dose of Paris Green settled them. Turnips were considerably injured by the fly, but with favourable weather may be an average crop. Scarcely any mangels or carrots grown.

Joseph D. Davidson, North Gwillimbury, York: Potatoes promise a good crop and turnips are looking well, though the fly has been pretty severe on them; the recent showers, however, have put them out of danger.

R. C. Van Norman, North Gwillimbury, York: Turnips poor; nearly all destroyed by the fly.

E. Hodges, West Whitby, Ontario: Potatoes are a good crop. Turnips are not looking well, but with a few showers we might have a fair crop; mangels and carrots good. The turnip fly did the crop a deal of harm, and potato bugs were very savage this season.

C. A. Mallory, Percy, Northumberland: Potatoes doing well; the beetle is worse this year than usual, but it is checked by the use of Paris Green. Turnips, the largest root crop grown here, look well.

Paul C. Van Horn, Hillier, Prince Edward: Potatoes very much injured by the bug; what few turnips are sown here have been destroyed by the fly.

Fred. N. Foye, Draper, Muskoka: Potatoes and turnips promise well; mangels and carrots not grown to any extent; early planted potatoes badly affected by the beetles.

FROM THE NOVEMBER REPORT.

J. H. Morgan, Anderdon, Essex: Potatoes very rotten, except the early ones.

R. H. Waddell, Tilbury, East Kent: Early planted potatoes escaped the rot, or suffered but slightly.

Francis Gifford, Camden, Kent: Potatoes almost an entire failure from rot.

Robert Cumming, Harwich, Kent: Potatoes have suffered much from rot, clay and heavy soils suffering most. It is pretty hard to determine the exact damage. Some farmers have lost all, others part, and some escaping. They are perhaps one-fourth of last year's crop.

Samuel Russell, Orford, Kent: A large growth of potatoes, but from one-half to three-fourths rotten, and even more, as some are not digging theirs at all. Other roots are very good, but not much grown, especially turnips, as they have rotted so of late years in the pits. The weather has been very favourable for securing root crops.

Wm. Clark, Aldborough, Elgin: Potatoes are dry and mealy on high land, rather sad on low land, scabby and small; in some sections eaten by white grub. On clay loam very many will not be dug at all; on sand fully one-third are lost by rot.

John McLean, Aldborough, Elgin: Potatoes are very good, what is left of them. The most of them in this locality have rotted. Some farmers are without a potato.

John Haggan, Malahide, Elgin: The potato crop in the early part of the season promised well, but was struck by a blight that caused the potatoes to rot. Probably 75 per cent. is destroyed.

E. M. Crysler, Charlotteville, Norfolk: Some potato crops have not been taken up, they were so badly rotted.

W. W. Wells, Woodhouse, Norfolk: Turnips, mangels and carrots are the best I ever saw.

John Senn, Oneida, Haldimand: Potatoes were good before the heavy rains, and were a heavy crop; but late ones are more than half lost by rot; many fields are not dug.

Wm. Mussen, Oneida, Haldimand: I am of opinion that seven-eighths of the potatoes will be destroyed before next spring.

Robert Jepson, Walpole, Haldimand: Nearly all the potatoes rotted, except those dug before the heavy rains about the 8th of September. Carrots are rotting at the roots on lowlands.

James McClive, Bertie, Welland: Potatoes are rotten, or at least 95 per cent.

John Dallas, Bosanquet, Lambton: Of what potatoes escaped the rot the quality is very good.

James Lovell, Brooke, Lambton: The greater part of the potatoes have been lost by the rot. What few remain are very scabby and of poor quality. Seed will be very scarce in the spring.

Simon Burns, Dawn, Lambton: About 90 per cent. of the potato crop is destroyed by the rot. Some very early planted escaped with little damage, but the tubers were very small.

John Grant, Sombra, Lambton: Potatoes taken up rotted equally fast with those left in the ground.

Charles Gale, Sombra, Lambton: Will not have enough for seed in this county.

J. B. Hobbs, Warwick, Lambton: Early potatoes were a good crop, nor were they eaten with bugs: but the late ones were swarming, and commenced to rot before they were ripe, and are rotting since digging time. Some people have none left; some have half their crop.

John Wright, Goderich, Huron: Turnips are good but not an even crop. The fly was hard on them when they came up, and some farmers have none on this account; but there seems to be a total absence of the turnip insect this year. The tops were covered with them in 1884.

Thomas Strachan, Grey, Huron: I do not know if the growth or yield of potatoes was ever better in this part of the country if they had not unfortunately rotted.

A. Drummond, Howick, Huron: Potatoes were an excellent crop and of good quality, but the rot has done considerable damage in some fields, and, what is singular, in other fields scarcely a rotten potato was to be found.

John Scott, Howick, Huron: Turnips planted from the 1st to the 7th of June are very good; those planted after that time are very thin on the ground in consequence of the fly.

G. Edwin Cresswell, Tuckersmith, Huron: Potatoes were a remarkably fine crop, but the loss from rot after digging is fearful. Numbers of farmers who raised hundreds of bushels will, owing to the rot, have to buy for home use and seed.

Henry Doupe, Usborne and Blanchard, Huron and Perth: The Early Rose has not been injured by the rot as much as other species of potatoes.

Frank Morley, Usborne, Huron: Turnips are almost an entire failure, the plants being destroyed by the fly. Those that are left are very small yet.

Malcolm McDonald, West Wawanosh, Huron: Potatoes are great in quantity and good in quality; some rot, but not much.

Thomas Askin, Amabel, Bruce: Potatoes were a good crop, but owing to the backward weather and late harvest they are not all up yet; not many rotten except on flat clay land.

John Douglass, Arran, Bruce: The potato crop is the best ever raised in this township. Considerable damage has been done by rot on some farms, especially on low ground. On some farms there is no appearance of rot. At present the extent of the loss is not much. Turnips are a lighter crop than for many years.

Daniel McNaughton, Bruce, Bruce: Potatoes were an excellent crop, and mostly got harvested in good weather; not much injured by rot except in low spots on undrained land.

Hugh Murray, Bruce, Bruce: Potatoes were an excellent crop, and of good quality. It is reported that they have commenced to rot in cellars.

William Irvine, Bentinck, Grey: Potatoes were an enormous crop, in some cases as high as 400 bushels per acre. On clay lands they are badly rotted, from one-third to three-fourths of the crop. I think there will be about an average crop left sound.

George Clark, Collingwood, Grey: If potatoes have any fault it is their immense size; not many rotten.

James Shearer, Egremont, Grey: The potato crop is good, both in quantity and quality, but there are loud complaints about rot. Some have lost about half their crop, while others are very little affected.

Joseph Townsend, Sullivan, Grey: A large crop of potatoes all over, but all grown on low ground had rot among them when taken out, and are gradually rotting in the pits. Any grown on high, sandy soil seem all right.

Henry Atkey, Keppel, Grey: For the first time to my knowledge large quantities of potatoes are being sent south from Wiarton on the G. T. Railway.

J. R. Irving, Innisfil, Simcoe; Turnips have not done well this year; a good many had to plant two or three times.

George Sneath, Vespra, Simcoe: The quality of the potatoes which are not affected with rot is excellent, but they have been injured very much by wet on heavy lands; fully one-half of the crop is destroyed. On light lands they are comparatively free from rot. Other roots as a general thing are still in the ground, and have made excellent growth during the last four weeks.

R. A. Brown, West Nissouri, Middlesex: Potatoes are not as numerous or as large as they were last year, even with the best advantages. In some places all have rotted, in others half, and on some farms none. One farm here had large beauties, and not a rotten one among them. They were put in as follows: the ground was ploughed last fall, also early in the spring, then the drills were opened with a plough and 20

loads of straw manure inserted in the drills; the tubers were dropped on the manure and covered by the plough. While all others are seriously damaged by rot, this field is an oasis.

James A. Glenn, Westminster, Middlesex: Potatoes are a complete failure on some farms. On all low or level lands they are very badly rotted; on sand and rolling upland the crop is fair; on heavy clay it is poor.

James Anderson, East Zorra, Oxford: Turnips are good where good seed was sown. It seems to be next to impossible to get good clean fresh seed.

J. C. Ross, West Zorra, Oxford: Potatoes would have been an extra crop had not the rot struck them, by which three-fourths have disappeared.

William Richmond, South Dumfries, Brant: Mangels are not much grown here; sugar beets are taking their place; they are a good crop.

Thomas Dunn, Oakland, Brant: The rot has struck this section, and struck it hard. Two-thirds of the potatoes are at present rotten in the hill, and the balance are badly rotting after being housed, whether in the cellar or in the pits in the field. The only exception to this is on very dry sandy ground, and also on new ground. Turnips will probably be largely substituted for potatoes the coming winter.

D. McLean, Ellice, Perth: A person who had about 300 bushels of potatoes informs me that he has about ten bushels just now fit for use. Some are a little better off. Where the crop was heavy the rot is also heavy. Potatoes that were dry or partly dry on the 11th of August are good. Fields that were green at that date were not worth digging.

William Courtice, Fullarton, Perth: Turnips are small in consequence of being late, because in most cases they had to be re-sown in spring, having been eaten by the fly.

Thomas Page, Wallace, Perth: All varieties of potatoes are affected by the rot. My crop is principally White Elephants, and I am certain they are much less affected than Early Rose, Late Rose, Dakota Red, Early Mayflower, Weld's Morning Star, and Pride of Canada, all of which are very bad. My soil is principally a black muck, and where dry from drainage the potatoes are not much affected.

W. D. Wood, Eramosa, Wellington: Turnips are much smaller than they have been for a number of years.

J. W. Gilmour, Peel, Wellington: About two-thirds of the potatoes are rotten, and in many cases they are rotting in the cellars after being taken in. Turnips are generally poor, and in many cases the farmers are turning the cattle in and pasturing them off.

Edward Halter, Waterloo, Waterloo: Potatoes have been large and good, but very little of the crop will be saved—I can safely say not one-fourth. The rotting is something I have never seen the equal of in 43 years here.

W. C. Smith, Wilmot, Waterloo: Carrots and mangels are pretty good, but are injured by running to seed.

Wm. McKinley, Luther, Dufferin: The fly in spring destroyed nearly all the turnips here.

James Stull, Grantham, Lincoln: Potatoes were a very good crop until the rot set in about the middle of September. The early varieties that were not dug are nearly all rotten.

R. Postans, Trafalgar, Halton: My own crop of potatoes is very fine, and the yield excellent. Many weigh over 1 lb. each; some over 1½ lb. Very few are hurt by rot, but on low land the rot is very bad.

John Sinclair, Chinguacousy, Peel: I find that early planted fields maturing early have escaped the rot.

D. B. Nighswander, Markham, York: Many fields of turnips were nearly destroyed by the turnip fly in early growth. The quality of those left is good.

J. D. Evans, Etobicoke, York: There were two-thirds of an average crop of potatoes, but they are rotting by wholesale. Several large fields here will not be taken up, as there are not enough sound potatoes to pay for the work.

Henry Glendinning, Brock, Ontario: The rot is bad in some varieties, while others are almost free in the same field. The Rural Blush appears to be almost free from disease.

Thomas Cain, Scott, Ontario: Potatoes were a very large and promising crop until injured by rot fully one-half. They are not so much diseased on light sandy grounds as on clay grounds. Persons who dug early say they are rotting badly. Turnips are mostly very small and rotting at the roots.

Joseph Picket, Uxbridge, Ontario: Turnips are almost a failure compared with last year. There is in most of them a small brown streak in the centre.

James McCullough, jr., Uxbridge, Ontario: This section of the county seems to be especially adapted for potatoes. Those who were fortunate enough to plant them in any considerable quantities are now reaping a harvest.

Wm. J. Grandy, Manvers, Durham: Turnips are a great deal destroyed by grasshoppers.

C. R. Allison, South Fredericksburgh, Lennox: The Early Rose potato, planted early on high and loamy soil, was of good quality and yielded well; but late potatoes of all varieties are almost a total failure from the dry rot. Many farmers have not gathered their crop where they were planted on low land, they are so badly rotted.

Leonard Wager, Sheffield, Addington: All the potatoes in my neighborhood that were ripe in August have no sign of rot; but the later ones are nearly all rotten now.

R. J. Dunlop, Pittsburgh, Frontenac: Potatoes will be generally small, as the large ones seem to be more affected with rot than the small ones.

John B. Wilson, Front of Lansdowne, Leeds: Potatoes planted on high, light soil escaped the rot, but are small and below an average crop. There was a blight or slight frost that killed the tops before the potatoes had attained their full growth.

G. C. Tracy, Williamsburg, Dundas: Potatoes are an abundant crop, but two-thirds rotted. The only variety that escaped entirely is the Garnet Chili.

P. E. Bucke, Ottawa, Carleton: The potato rot has done serious damage to tubers in this locality, but the extent cannot be yet ascertained as the potatoes which are gathered sound decay afterwards in pits and cellars.

David Taylor, Bagot, Renfrew: Potatoes, quality good; no rot seen about here yet.

Thomas Roche, Hagarty, Renfrew: Splendid quality of potatoes; no injury from any source.

George W. Deller, Cardiff, Haliburton: Potatoes generally are exceedingly good in this township. We seem to have escaped the rot altogether. In fact several report that they have not seen so little rot for years. Others are of an excellent quality.

Dan. Williams, Glamorgan, Haliburton: Early potatoes, where planted early, are very good. Late potatoes, and all late planted, will not be half a crop, the August frost having killed them. I do not hear of any rot.

A. Wiancko, Morrison, Muskoka, Potatoes yielded well. Those taken up early—in the end of September—seem to keep well. There is rot in most places, but in different degrees.

Robert F. Ogle, Carnarvon, Algoma: The turnip crop is good, but in most places the turnips had to be re-sown two or three times, as the fly did away with them.

THE NEW CROP OF FALL WHEAT.

A considerably increased average acreage under fall wheat appears the rule for the new crop throughout those portions of the Province where this cereal is the staple crop. In eastern Ontario, where its liability to winter-killing renders it less successful than spring wheat, there is no perceptible change in the small area devoted to its cultivation. The late harvest made ploughing and seeding rather backward, and operations were further delayed in the southerly districts of the Province by the excessive rains which succeeded in the early part of September. These being in turn followed by a somewhat extended period of dry weather, the ground in many places, particularly on stubble lands, became baked and lumpy, and sowing was consequently difficult. In the case of fallowed land the conditions were more generally favourable. However, although seeding was delayed, the young plant made a prompt and vigorous start and with a fine, mild, open fall, with a general absence of heavy frosts, and sufficient moisture to promote active growth, the new wheat fields presented a very thrifty and promising appearance at the setting in of winter. The wire worm was at work on the wheat roots in a good many localities in western Ontario, and a few yellow patches in the fields indicated the presence of the Hessian fly; but the injury done by these pests was on the whole insignificant. Some fields, too, which were sown very early were attacked by grasshoppers, but otherwise the crops have been unmolested.

FROM THE NOVEMBER REPORT.

Arthur J. Arner, Gosfield, Essex: The ground was in excellent condition for seeding till about the 15th, of September, and the wheat sown between the 1st and 15th makes a fine appearance at present. Later sown fields look spotted, the wheat on the drier parts of the field not germinating properly.

Robert Manery, Mersea, Essex: We could have no better seed-bed than we had this fall. Early sown looks splendid; late sown looks healthy, but rather thin.

Robert Cumming, Harwich, Kent: All high or well-drained land was in good condition, but low-lying or heavy soils were wet in the fore part and baked in the latter part of seeding.

Daniel Black, Dunwich, Elgin: There is more wheat sown this year than there has been for a number of years, and it never looked better; there is not a poor field around here. The ground was in splendid condition at the time of sowing; it was easily worked, and there was plenty of moisture. There are some yellow spots in the fields, but I do not think they will do any harm, as the rains are making them look all right.

C. H. Kitchen, Townsend, Norfolk: I think the acreage of fall wheat sown is somewhat increased over last year, from the prevailing opinion that the price of wheat must come up next season on account of the deficient wheat crop all over the world this last harvest.

John Dallas, Bosanquet, Lambton: The present appearance of fall wheat is all that could be desired.

James Lovell, Brooke, Lambton: Clay land had become greatly compacted by the heavy rains of the summer, and was not in very good state at seeding time, but the early sown has made a good growth and is now looking well. A good deal of the late sown did not come up on account of the dry weather.

Simon Burns, Dawn, Lambton: The crops look splendid at present, there being no enemy so far to contend with.

James Watson, Moore, Lambton: The wheat sown from the 1st to the 10th of September got a good start, as the ground was then moist. Drought set in, and from the 10th of September to the 1st of October the ground got hard in clay soils, with scarcely sufficient moisture to germinate the seed, but subsequent rains have brought it up, and now it looks pretty well.

James Mitchell, Howick, Huron: The condition of the ground at seeding time was the very best. There were frequent showers and the seed sprung up at once, and the present appearance of the wheat is equal to that of any previous year.

G. Edwin Cresswell, Tuckersmith, Huron: The fine, warm fall and genial rains have pushed the young wheat plant ahead splendidly.

James Tolton, Brant, Bruce: The present appearance of the crop is generally better than I have ever seen it here.

Peter Clark, Culross, Bruce: The seed bed of what was sown in August was good. The heavy rains of the first two weeks in September left the ground very wet and cold. Fall wheat looks very backward and sickly for this season of the year. The Hessian fly has made its appearance for the first time in this section of country.

John McCallum, Bentinck, Grey: The condition of the early sown was good, the ground being in very fine order. The warm, genial showers that prevailed at the time caused the seed to start at once, and the blade has a healthy appearance.

John Booth, Normanby, Grey: The acreage of fall wheat sown as compared with this year's crop is about one-third more, owing to the failure of spring wheat by rust.

James Alexander, Ekfrid, Middlesex: Wheat sown along side of grass fields is considerably eaten up by the grasshoppers, but only the outside ridge.

James Sifton, North Oxford, Oxford: The ground was rather dry at time of seeding, but at present the crop could not look better. No insect has yet troubled it.

W. B. Freeborn, Mornington, Perth: The ground at seeding time was rather wet, which was the cause of a great amount of late sowing.

Charles Masson, Eramosa, Wellington: There is one-third more fall wheat sown than there was last year. It has been put in earlier, and in general the ground was in a good state of cultivation. The present appearance of the wheat is very promising; the blade is of a dark green colour, and looks as if it would stand the winter well.

J. W. Gilmour, Peel, Wellington: As the wheat in this section is nearly all sown after either pease or barley, the ground being consequently baked and in many cases too wet to make a good bed, the crop does not look as well as the wheat did at this time last year.

James Wilson, North Dumfries, Waterloo: Wheat sown after the 7th of September this year is not covering the ground nearly so well as that sown during the first week of September. Heavy rain in the second week delayed sowing several days, besides making the ground cold, so that a good deal of the wheat is going to have a rather small top at the commencement of winter.

W. C. Smith, Wilmot, Waterloo: A great breadth of fall wheat stubble is sown again without manure. The plants look weak and will heave with the frost. It is a waste of seed to re-sow upon exhausted land with winter wheat. The majority of our farmers summer-fallow stubble, plough in the fall and three or four times through the summer, to kill Canada thistles. They work the land to death. Winter wheat kills worse on fallows of this kind than on any other.

Isaac A. Merritt, South Grimsby, Lincoln: The crop in general presents a promising appearance.

Robert Inksetter, Beverley, Wentworth: On account of the late and wet season, the ground was not in the best condition at seeding time, but it looks very well now.

John Sinclair, Chinguacousy, Peel: Owing to heavy rains early in September, fallows were so much saturated with moisture that they could not be ridged up or sown until very late in the season, and then they were not in a very tillable condition. Hence the crop is very backward, and many fields did not come up evenly.

J. M. Drummond, Otonabee, Peterborough: It is remarkable that this year fall wheat has made a good growth, but not the grass. Last fall it was just the reverse—the grass was good and wheat not so forward.

THRESHING, MARKETING AND FALL PLOUGHING.

With the fine working weather that prevailed during the larger half of October, farmers made good progress with their threshing. Throughout western Ontario the work was about finished by the end of that month, and it was well advanced everywhere except in some of the northern districts, where the fall season is so short that threshing is usually left till after the snow falls. The movement of grain to market, however, was

rather slow, the low range of prices for all agricultural products making farmers reluctant to sell. The only grains going forward with any degree of activity were fall wheat and barley. The latter where it is grown in marketable quantities, and where it was sound and bright, was generally sent in preference, the constant American demand for Canadian barley for malting purposes ensuring for it a ready sale at fairly remunerative rates. Among farmers whose necessities for money did not compel them to force sales, there was a strong disposition to hold back their wheat in hope of a rise in the winter. Many correspondents aver that barley has been their most profitable grain crop for market, while other coarse grains, as corn, pease and oats, or rusted spring wheat, of which there were such large quatities last year, were turned to the most economical use when retained for feeding to stock. But an enormous proportion of the barley crop was rendered unsaleable by discolouration, and would doubtless be utilized in the same way.

The lateness of the harvest retarded ploughing operations considerably in the fall. The weather, however, was generally favourable, late rains having left the ground mellow and easy to turn, and following the rain came a succession of fine, moderate days, just such as are required for good progress in ploughing. The only exceptions of moment to this report were found in a few localities in the extreme west end of the Province, where the ground had become baked, and in some of the St. Lawrence counties, where the rainfall was excessive.

FROM THE NOVEMBER REPORT.

Arthur J. Arner, Gosfield, Essex: Barley being earlier than corn, and a good growing food, we feed it to hogs to give them good frames previous to corn feeding for fattening.

W. G. Morse, Mersea, Essex: Some think barley chopped or boiled a better feed for hogs than corn. Hogs are nearly fat before corn is harvested.

John Dallas, Bosanquet, Lambton: Barley is not likely to be much fed on the farm, as it is the only grain that brings a fair price.

John Morrison, Plympton, Lambton: When barley is over 50 cents per bushel, farmers generally sell it.

James Mitchell, Howick, Huron: If low prices in beef and pork rule, the barley will go to market.

Wm. Welsh, Huron, Bruce: Most of the barley will be sold, owing to pease and oats being cheaper for feeding purposes, 48 lbs. of barley and 60 lbs of pease bringing the same amount of money.

Joshua Irvine, Lobo, Middlesex: A large quantity of barley will be fed to stock. Farmers consider that it pays as well to put it in beef as in beer.

E. D. Smith, Saltfleet, Wentworth: Barley is not so extensively grown as formerly. The price is too low to sell, and it pays much better to grow corn for feed. Pease also pay better for feed, if free of bugs as they are this year.

D. B. Nighswander, Markham, York: A great many farmers think they can realize more for barley by feeding it to stock than by selling it.

Simpson Rennie, Scarboro', York: Not much of the barley will be fed if the farmers can get for it from 55 cents to 60 cents per bushel.

John Gibson, Markham, York: Threshing and marketing of grain at this season of the year is a great loss of time for fall ploughing, which, if left till late in the season, is hurriedly and slovenly done; or if it is left till spring, late sowing, with great injury to the crop, is the result. If farmers were generally to work the land until the frost sets in, it would not only regulate the work all the year round, but add greatly to the fertility of the soil.

L. Weller, Scott, Ontario: Farmers lose a great deal of valuable work on their farms by threshing and marketing in the fall of the year, and often lose the best barley market by not doing it.

R. Osborne, Clarke, Durham: Barley is the paying crop of the year. If it had not been for barley, many of our renting farmers would have gone to the wall. The crop and prices are both good.

Thomas Cain, Scott, Ontario: Barley brings a better price relatively than any other grain.

R. S. Webster, Scott, Ontario: The shortage in spring wheat will result in farmers, as a rule, selling most of their barley.

David J. Walker, Storrington, Frontenac: There is a growing tendency among farmers to feed more while the price ranges so low.

Albert H. Smith, Monck, Muskoka: The price of oats is fixed by the lumbermen and others. If the farmers will not let the middlemen have all the percentage they want, or take truck, they send to the front for them.

Robert F. Ogle, Manitoulin Island, Algoma: Wheat is quoted at Manitowaning at 70 cents to 75 cents, barley at 50 cents, and oats at 30 cents to 32 cents.

UNDERDRAINAGE.

Though there was a gratifying increase in the amount of underdraining done in some parts of the Province last season, in others little progress has apparently been made, notwithstanding the unanimity with which correspondents speak of its great advantages wherever it has been tried. While a season like that of 1885 illustrates in the most practical way the importance of a proper drainage of the soil, it at the same time renders it difficult for the farmers to take immediate advantage of the lesson, and for several reasons. Many correspondents say that the harvest season was so wet that farming operations were much crowded, and consequently little time or attention could be devoted to drainage. Others aver that the land which stood most in need of underdrainage was too wet to allow of such work being performed at the proper season, while there are frequent complaints that the low prices and hard times generally do not leave the farmer's bank account in a condition to justify him in engaging in operations in which the returns —however certain they may be in the future—do not follow close on the heels of the expenditure. Notwithstanding all these drawbacks, however, a decided increase in the area of well drained lands marks the past year as compared with previous years, more especially in the western peninsula of the Province, and it is equally certain that the value of underdraining as an investment is yearly becoming more apparent to the great mass of the farmers of Ontario. Though there is less complaint than there was the previous year of the difficulty of getting tile, still not a few correspondents mention that difficulty as one which has prevented this material being more generally used in the construction of drains. As a rule the supply of skilled labour is reported to be adequate; yet, as some correspondents put it, the labour is a good deal more abundant than the skill. Though tile is the material generally used for underdraining, yet in some sections of the country, partly from necessity and partly from choice, stone and wood are employed for that purpose,—stone chiefly in the eastern counties, and cedar, hemlock and pine in the Lake Huron and Georgian Bay counties. Many correspondents, especially in the eastern counties, in reporting that nothing has been done in the way of underdraining, state that the nature of the land either does not require drainage at all or, if any, that open ditches are sufficient. Draining machines are gradually making their way into the best agricultural communities of the Province, and satisfaction is generally expressed with their work. Rennie's Elevator is the machine most generally in use, though others are occasionally referred to. A correspondent in Bruce mentions Carter's machine, and another in Lambton speaks of a machine manufactured by Ansley, of Watford, which cuts the sides of the drain, and "works well, and is a great help."

FROM THE NOVEMBER REPORT.

P. J. Freeman, Rochester, Essex: The land lies too low to admit at present of successful underdrainage. Several drains have been and are still being constructed under the Drainage Act.

J. G. Stewart, Raleigh, Kent: One or two experiments have been made, but the land is too level; all surface drains.

Samuel Russell, Orford, Kent: The somewhat excessive rains have rather impeded draining on account of crowding other necessary work into less space of time. Tile-draining is, however, increasing, as the manufacturers tell me they can scarcely supply the demand.

John McLean, Aldborough, Elgin: Not much underdraining done in this locality. Tile-yards have nearly all on hand that they made this year.

Charles Chute, Malahide, Elgin: Considerable is being done, but if more tile-yards were distributed over the country more tiles would be used.

W. W. Wells, Woodhouse, Norfolk: Farmers are beginning to see that thorough surface drainage is producing the best results.

S. W. Hornibrook, Dunn, Haldimand: Very little underdrainage is needed—not much flat swampy land. Still a little is used.

E. A. Dickout, Bertie, Welland: No underdraining in this township. One reason is lack of capital; another is that we have no practical educators in that direction. I think it would be a good idea for some one to do some missionary work among farmers, showing them the advantages resulting from underdraining: some one from the Agricultural College, for instance.

J. B. Hobbs, Warwick, Lambton. There cannot be two often urged on farmers the necessity of more thorough draining, as all roots as well as all grain crops yield from one-third to one-half more when put in early, and this can only be done on dry land. I think it would be a good policy if our Government would loan money for draining a little cheaper, as it would proportionately increase the revenue.

B. B. Smart, Sarnia, Lambton: One man has a Rennie machine, but I think there is room for improvement in it.

R. Fleck, Moore, Lambton: Our farmers are steadily underdraining. Our township has not yet availed itself of the Government aid for tile or other underdraining, as farmers are inclined to use their own means.

James Lovell, Brooke, Lambton: A good many are underdraining their land. On my farm of 100 acres I put in over 500 rods last year, and am putting in about 700 this season. Plenty of tile can now be obtained all around us, but skilled labour is somewhat scarce. The only machine in use is one for cutting the sides of the drain; it works well and is a great help; manufactured by Wm. Ansley, Watford.

James Scott, Howick, Huron: Most of the drains in this section are made of wood. A box is nailed together made from 1½ inch hemlock lumber. Some use long poles laid side by side and covered by a third, which is said to answer the purpose well.

G. Edwin Cresswell, Tuckersmith, Huron: Draining with wood is a huge mistake. I have on my farm 50 acres drained with tile, 20 years laid, and it is still working well; whereas my wooden drains, put in about the same time, have been renewed twice.

N. J. Clark, Usborne, Huron: Farmers are just beginning to see the good results of underdraining. Plenty of tile is manufactured, but other styles of drains are much in vogue.

Wm. McArthur, West Wawanosh, Huron: There are no tiles made in this section; hemlock is used instead for the pipes.

J. B. Ritchie, Greenock, Bruce: We do not require artificial underdraining in this part of the country. The land over a large area of this section is naturally underdrained with gravel, and we do not require to ridge up.

Wm Welsh, Huron, Bruce: It is evident that early sown grain is most free from rust. To accomplish early sowing, draining must be resorted to, which will leave the land fit for working on as soon as frost and snow have gone. As it is, when a wet spell sets in undrained land is usually from one to three weeks later of sowing, which makes a vast difference in the yield, so much so that I fully believe three years would (in the difference of crop) pay all the cost of draining. . . . There is plenty of tile of a very poor sort, so much so that many prefer hemlock boards. If we could get a good, hard and durable tile it would encourage draining very much.

Donald Blue, Huron, Bruce: If we had more skilled labour for draining, I believe there would be more effort put forth to have our farms put in better order.

R. Gillies, Sullivan, Grey: No underdraining needed here, as the soil is stony and never holds surface water.

John Booth, Normanby, Grey: There has been some draining done in this locality this season. Some is done with stone leaders with an eye; the others are known as wedge drains—stones packed in bottom of drain on their edge and filled with small stone to 18 inches of surface. No draining machines are used; labour is plentiful, but a good drainer is hard to be got.

Peter Bertram, Orillia, Simcoe: Very little progress in underdraining; no tile to be had near here.

W. W. Colwell, Essa, Simcoe: Not large, but more than I have ever noticed in any previous year. Tiles are not much manufactured here, and carriage makes them too expensive for general use.

Henry Anderson, Westminster, Middlesex: There is a great amount of drainage done; plenty of tile this year, as there are now five tile factories in this township. Skilled labour is scarce.

R. W. Giffin, West Nissouri, Middlesex: There is more or less of this kind of work done every year, but it is on the increase, for the farmer finds it pays.

James Alexander, Ekfrid, Middlesex: We have an abundant supply of excellent drain tile made by machines, but owing to the low price of stock and other produce very little draining has been done.

James Anderson, East Zorra, Oxford: Not much progress, as it has been too wet. The supply of skilled labour is inadequate, but plenty of such as claim to be skilled.

John F. Tribe, Dereham, Oxford: Farmers are underdraining largely this year—more so than in former years.

Thomas Baird, Blandford, Oxford: There has been more tile-draining done this year than ever has been done in one season before in this township. Tile could not be had in sufficient quantities to meet the demand. Hands were more numerous this year than they used to be a few years ago; there is so much more of it being done that it is becoming a profitable business to follow. This season has been the means of many a one commencing underdraining that never put in a tile before, and hence the great scarcity of that article this season. If we had a few more seasons like this we would begin to get our eyes opened to the great benefits to be derived from a complete system of underdraining.

Thomas Lunn, Oakland, Brant: Very little tile draining done this year, but last year's work shows good results. The supply of tile is plenty, but the quality is poor. Very little skilled labour, and no draining machines in use here.

Thomas Lloyd Jones, Burford, Brant: This township requires but little underdraining; a large portion requires surface-draining, and it is being done on an extensive scale.

George Follis, Wallace, Perth: About fifty rods to every hundred acres in our township on an average.

R. Francis, Fullarton, Perth: A large quantity done and still progressing. Plenty of tile and labour.

Robert Forrest, Elma, Perth: Considerable underdraining done. We use mostly lumber, no tile being manufactured in our township.

Duncan Stewart, North Easthope, Perth: Good drainers command their own figures—none could be employed.

Robert Simpson, Downie, Perth: A great deal of tile-draining done here this year—more than usual. Underdraining is the most important branch of agriculture in this township, for it nearly all has a cold clayey subsoil. In a season like this many a dearly taught lesson has been learned by our neighbours. They are busy draining amongst their fall wheat; nearly every farmer has commenced to drain now.

James Cross, Peel, Wellington: Not much progress in draining here and I don't know the reason, as the land needs draining the worst way; plenty of tile to be had.

John Booth, Maryboro', Wellington: Not much doing; tile very scarce.

W. Brown, Guelph, Wellington: Not much underdraining on the whole; skilled labour plentiful enough.

W. D. Wood, Eramosa, Wellington: Very little has been done in draining as yet, but farmers are beginning to recognize the importance of such work and are doing more year after year. The supply of tile of good quality is not adequate.

Samuel Brubacher, Woolwich, Waterloo: Lots of draining done this summer, and plenty of tile. There is a tile yard here where they turn out about 20,000 per day.

W. C. Smith, Wilmot, Waterloo: There has not been so much underdraining done this summer as usual. Low prices for produce checks improvement. A large stock of tiles on hand, which will be hauled away in sleighing, ready for next spring. No draining machine in use now; we had three machines ten years ago, but they did not give satisfaction.

John Green, Mono, Dufferin; No underdraining done here, though it is very much needed in this section.

John Preston, E. Garafraxa, Dufferin: No tile made in this locality. I think if it could be got handy there would be a great many drains put down.

E. D. Smith, Saltfleet, Wentworth: Not a great deal of underdraining done. Farmers are seeing its value, however, and are commencing. Much will be done in the next ten years. Cost is the chief hindrance. Splendid tile eight miles distant; $7.50 per thousand for two inch.

Wm. McDonald, Equesing, Halton: Underdraining is considerably needed in this section, but is very little attended to. The nearest tile-yard is about twelve miles away.

Wm. Kersey, Toronto Gore, Peel: Considerable progress has been made this year—double that of any previous year, both as to quantity of tile put in and number of farms drained. There are two of Rennie's ditchers in use in this locality.

Wm. W. Finlay, Scarboro', York: More would be done if skilled labour was available.

George Evans, jr., Georgina, York: Underdraining has made considerable progress. Tile has to be hauled a long distance. Skilled labour on this industry is not very plentiful; no draining machines in this township.

Robert Moment, Clarke, Durham: Very little underdraining done or required in this township; mostly rolling land.

Walter Riddell, Hamilton, Northumberland: Not much progress, though some draining is done every year.

Louis P. Hubbs, Hillier, Prince Edward: Not a mile, I guess, in the whole county. We cannot get tile here at all, but I think it would be largely used if it could be had reasonably.

C. R. Allison, South Fredericksburgh, Lennox: There is not a very large amount of land in this section laid with tile, though the farmers are now doing more than they formerly have done. The supply of tile is not sufficient.

Joshua Knight, Storrington, Frontenac: There has been more draining done this fall than usual on account of the extremely wet season.

Wm. J. Newman, Oxford-on-Rideau, Leeds and Grenville: Farmers have been neglecting their underdraining in this locality of late years. This being a wet season, they may take warning by their negligence.

G. C. Tracy, Williamsburgh, Dundas: Very little underdraining done, but very much surface-draining under the provisions of the Ditches and Watercourses Act, 1883, which will reclaim much waste land. Underdraining would be of very considerable advantage in many sections. It is generally thought that frost would break tiles.

James Cattanach, Lancaster, Glengarry: There is a good deal of underdraining done with stone, timber and boards, but no tile yet as far as I know.

Paul Labrosse, East Hawkesbury, Prescott: Nothing known of tile-draining in this locality—but good underdraining made with stone.

Wm. Doyle, Osgoode, Carleton: There is very little underdraining done here; it is chiefly surface-draining.

A. Schultz, Sebastopol, Renfrew: There is no underdraining done in this township; the land here is all high and dry, and requires no artificial drainage.

F. Kosmark, Admaston, Renfrew: Not much underdraining this year as tiles are not made here, but have to be brought from thirty to forty miles.

W. Paterson, Ramsay, Lanark: Little drainage is done to what should be. Tiles cannot be had; after a drive of twenty miles I had to return a week ago without one tile, and I have the drains dug for months. No tile-draining machines here.

John Fell, sr., Somerville, Victoria: No underdraining done here yet, nor likely to be for some time, the land in this vicinity not requiring underdraining to the same extent as in many other parts of the Province.

Wm. Ramsey, Mariposa, Victoria: There has been some draining this year on low flat lands. The tile is not sufficient without hauling a long distance.

James Tindle, Smith, Peterboro': Many farmers would drain more if they could get men who would do the work at a reasonable price.

James S. Cairnduff, Harvey, Peterboro': None with tile—a few with stone and cedar poles.

John Hollingworth, Watt, Muskoka: I have put down about 120 yards of rubble drain, and intended to have done more.

Henry W. Gill, Watt, Muskoka: The past season has established the absolute necessity of underdraining.

FRUIT AND FRUIT TREES.

The acreage under orchard and garden in the several districts of the Province for the past three years, as given in the returns of the township assessors, was as follows:

Districts.	1885. Acres.	1884. Acres.	1883. Acres.
Lake Erie	39,844	39,952	40,084
Lake Huron	19,925	19,952	19,907
Georgian Bay	11,555	11,577	12,228
West Midland	40,593	41,628	42,800
Lake Ontario	56,796	55,112	57,358
St. Lawrence and Ottawa	13,145	14,320	14,760
East Midland	8,838	9,780	9,950
Northern Districts	570	516	363
Totals	191,266	192,837	197,450

It is necessary to point out, as has been done in previous reports, that these figures are merely approximations, and that the diminution they show in the fruit area from year to year is in all probability more apparent than real. The great weight of testimony, from the Bureau's correspondents and from other authoritative sources, indicates a steady growth in the fruit-growing industry in Ontario, and it is not likely that a larger production is obtained from a smaller acreage than in previous years. The anomaly may, perhaps, be explained by the fact that very few farmers make actual measurement of their fruit area, so that the variation of a fraction of an acre in the estimate in a multitude of individual cases, in one year as compared with another, makes an immense difference in the aggregate acreage of the whole Province.

The following table of the fruit exports of the Dominion for the past ten years will show the growth of the trade during that period:

Year.	Barrels.	Value.	Year.	Barrels.	Value.
1876	84,107	$170,005	1881	334,538	$645,658
1877	77,880	194,942	1882	212,526	540,464
1878	53,213	149,333	1883	158,018	499,185
1879	87,101	157,618	1884	51,019	173,048
1880	146,548	347,166	1885	238,936	635,240

The fruit produce of the year has been on the whole a good one. No section of the Province has been without a fair supply of fruit of one kind or another for the home wants of the inhabitants, and in most cases they have had a surplus to send abroad.

The history of the year, with regard to the condition of the orchards, has been one of alternate reverses and recoveries. Although the severity of the winter had destroyed considerable numbers of trees, most orchards looked fairly promising at the beginning of the season, and blossomed luxuriantly. Before the fruit set, however, hundreds of these trees gradually withered and died from no other apparent cause than impaired vitality induced by the rigors of the winter or the frosts of the unusually late and cold spring. In the northern and eastern sections of the Province all kinds of trees, old and young alike, succumbed; throughout western and southern Ontario the loss was confined chiefly to peach trees and young apple trees of the more tender varieties. And yet, in spite of these adversities, the orchards generally yielded a profitable return to fruit growers.

The apple crop, although considerably smaller than the previous year's, was exceptionally large for an "off year." In almost every one of the older-settled counties where apples are regularly cultivated, a surplus of generally excellent quality was reported. Fall and winter apples especially turned out much better than they were expected to do about midsummer. In some of the counties on the north shore of Lake Ontario wind storms blew a good many apples to the ground. Occasional mention was made also of the ravages of the codling worm; but the principal fruit districts of the Province were less affected by this pest than in other years, and the apples were as a rule sound and firm in flesh, and clean in skin. The exportations of apples to England and the North-west, especially from western Ontario, were great. Some farmers, however, say that a sluggish demand and low prices induced them to keep their apples to feed to their cattle and hogs.

In the Lake Erie, Lake Huron and West Midland districts, in the Niagara peninsula, and in the counties of Northumberland and Prince Edward, pears were moderately plentiful, with a fair surplus above local needs, and the crop was sound and healthy. In every other part of the Province the supply was extremely limited. This fruit is only very slightly and very tentatively cultivated in the St. Lawrence and Ottawa and East Midland districts.

In peaches the general failure of 1884 was repeated. The reports were a unanimous lament of winter-killing and barrenness. Many of what were a few years ago fine peach-growing localities now contain hundreds of peach trees standing dead. Only a few sheltered localities on the Niagara peninsula afforded even a small yield. Young trees, however, were planted, have thus far made a successful growth of wood.

Black knot on cherry trees, and black knot and curculio on plums, have made sad havoc of these fruits during the last few years. In many parts of western Ontario, where they were both successfully cultivated formerly, they have been almost wholly abandoned in despair. The result has been that the yield of cherries and plums throughout the whole of the western peninsula was last year nearly *nil*. From the Lake Ontario, the St. Lawrence and Ottawa and the East Midland districts, in spite of the combined assaults of black knot, curculio and frosts, a good crop of plums, and a moderote crop of cherries—the common red variety almost exclusively—were reported. The ravages of both the curculio and black knot have been less extensive in these districts than they have been farther west.

It is somewhat remarkable that the winter which was so destructive of fruit trees appeared to have passed harmlessly over the grape vines; and, as the season was quite favourable to growth, the vineyards of the Province everywhere flourished and yielded enormously.

All small fruits were equally, or if possible, more plentiful—strawberries and raspberries especially so. Several correspondents stated that the supply of these berries was so great that they were a drug on the market. In the sparsely settled districts of northern Ontario wild fruits, such as strawberries, raspberries and huckleberries, grew in profuse abundance, but, as is the case every year, they went to waste for want of gatherers.

Orchards were, on the whole, remarkably free from insect pests. The apple tree borer wrought considerable damage. The summer being cool and moist, and the autumn fine and moderate, promised a rapid recovery from the previous losses, and before the winter had closed in fruit trees showed a rigorous growth of young wood for the next season.

FROM THE MAY REPORT.

Edward Nash, Mersea, Essex: Apple and cherry trees are all right, but peaches and grapes are badly winter-killed.

W. McKenzie Ross, Harwich, Kent: Apple trees are loaded with blossom-buds. Peach trees are dead in many places, and there will be no fruit on them. Pears, plums and cherries are in good condition, and came through the winter in fine order.

Dugald Campbell, Dunwich, Elgin: Buds are very slow in opening; they appear rather dry to give a healthy blossom. That is back from lake front: along the lake shore there will be plenty of blossom, but late in opening.

Charles Chute, Bayham, Elgin: Apple and cherry trees look well, and there is plenty of fruit-buds. Peach trees were badly killed by the winter, and the fruit-buds appear to be all killed.

G. E. Fitzgerald, Rainham, Haldimand: Pears are full of blossom buds, and old plum trees are full of black knot. Young Lombards are doing well; small fruits are looking well. No peaches.

S. H. Van Every, Pelham, Welland: Peach trees have been injured very much by the winter. Other trees appear all right.

R. T. Marshall, Moore, Lambton: Apple and cherry trees look well; peaches are winter-killed, and also most of the plums.

George Hess, Hay, Huron: Peach trees are nearly all destroyed by the unusually severe winter. Apple, plum and cherry trees seem to have stood the winter well, as the blossoms are coming out fine.

George Hood, Morris, Huron: My plum trees that have borne fruit, are dead; those that never bore fruit are alive. The frost seems to have injured many of the young branches on the apple trees.

George Binnie, Glenelg, Grey: Fruit trees do not seem to have been injured by the winter. The few plum trees that were left are completely covered with black knot.

Michael Coyle, Sunnidale, Simcoe: Apple, peach, plum, cherry, and other fruit trees look bad, the winter having affected them very much.

Jasper Martin, Medonte, Simcoe: Apple trees are good; one-half the plum trees have died; cherry trees have stood the winter well; other small fruit look healthy. Any tender varieties are badly injured, while hardier varieties appear healthy.

Wm. Sutherland, Ekfrid, Middlesex: An average of fifteen years when the wild plum blossomed here gives May 10th; it blossomed yesterday (17th), making the season seven days later than the average.

Chas. Jas. Fox, Deleware, Middlesex: Apple, plum, and cherry trees bid fair to be full of blossom. Peaches are all winter-killed.

Wm. Wright, McGillivray, Middlesex: Plum trees are nearly all destroyed by black knot. I don't think the winter has injured trees to any great extent.

Alex. McFarlane, Norwich South, Oxford: All fruit trees seem to be healthy except the peach, which has been nipped on the tender boughs of last year's growth.

B. Dewitt, Waterloo, Waterloo: Plums and cherries are failing in this section of country.

John H. Lindebury, Gainsborough, Lincoln: Apple, plum and cherry trees are looking well; peach trees along the lake show some blossoms, but on the mountain none. I think it was too cold for the peach.

George Walker, Clinton, Lincoln: Fruit trees appear extra good except peaches; upon these winter has had a bad effect, killing about one-half of the blossom-buds.

Erland Lee, Saltfleet, Wentworth: Fruit trees are affected very little, except the peaches, which have about two-thirds of blossoms killed.

John Willis, West Whitby, Ontario: Apple trees are all right; a large number of peach and pear trees were killed. Plums and cherries are sadly affected by black knot.

William Windatt, Darlington, Durham: Trees generally have stood the winter well; cherry trees are being destroyed by the black knot.

William Macklin, Haldimand, Northumberland: Apple trees appear poor, while plums promise well. Cherry trees are nearly all destroyed by the black knot. Those who tried to raise peaches have had them nearly all killed by the late exceedingly long and cold winter.

Wm. H. Montray, Amherst Island, Lennox and Addington: Fruit trees look healthy and do not seem to be injured, except where limbs are broken off by a few days of frozen rain.

C. Chapman, Edwardsburg, South Grenville: Some fruit trees have been injured by field mice, but they seem to have stood the winter well.

Wm. Kyle, Williamsburg, Dundas: Fruit trees seem to have stood the winter well.

J. J. Smyth, Gloucester, Carleton: Apple and plum trees appear to be safe, but late.

John Stewart, McNab, Renfrew: As far as we can judge, fruit trees have wintered safely.

Thomas Lett, Wilberforce, Renfrew: The apple and plum trees are loaded with blossom-buds.

Daniel Drummond, Ramsay, Lanark: What fruit trees there are seem all right.

George Green, Ramsay, Lanark: Fruit trees have all suffered from the hard winter: there is more dead wood than usual; many are killed and some are split from roots to branches.

Thomas Beall, Ops, Victoria: Apple and plum trees are looking unusually well, showing a large quantity of blossom-buds. Young pear trees are nearly all very much injured by the severe winter weather. Some of the young wood on older trees is frozen, but the fruit buds on healthy trees are looking well.

Porter Preston, Belmont, Peterborough: The winter has not affected trees in the least, but they are very backward.

John H. Delamere, Minden, Anson and Hindon, Haliburton: The past winter has been very hard on young orchards, which I may say is about all we have here. Planting fruit trees has not proved generally successful, although in some cases the Duchess of Oldenburg apple has attained perfection. Several varieties of crab apples do well.

John Johnston, Thurlow, Hastings: As the spring is very late, grass and forest vegetation is backward. Fruit trees are looking splendid, the winter not having affected them.

James Young, Morrison, Muskoka: There are not many orchards in this township, but what I have seen look strong and healthy.

Stephen Brundige, Ryde, Muskoka: The appearance of the fruit trees is good; they have wintered well, but some have been peeled two feet high by mice.

Hugh Jackson, Humphrey, Parry Sound: Apple and plum trees seem all right after the winter.

S. J. Peake, Foley, Parry Sound: Apple trees suffered badly; I have lost fifty trees this winter; plum trees look promising.

Robert F. Ogle, Carnarvon, Algoma; Apple trees do well when the right sort are put out on proper soil, well drained, fenced and good care taken of them; however, this is not the rule here, and apples are scarce.

FROM THE AUGUST REPORT.

Robert Manery, Mersea, Essex: The codling moth, I think, is the worst this season I ever saw it. It seems to be the worst on early apples.

W. E. Wagstaff, Gosfield, Essex: Almost all the red currant bushes have been eaten by the saw-fly.

W. Mackenzie Ross, Harwich, Kent: I have six baskets of the loveliest apples at the market to-day—ripe without a spot or worm; I never saw better; they are Russian varieties, of which I have fifteen sorts of the most beautiful kinds.

Lawrence Tape, Orford, Kent: Cherries are almost a total failure. The trees came out in good bloom, but the blows soon went off. I think the trees were hurt with the severe frost in winter.

B. B. Smart, Sarnia, Lambton: R. Wilkie, Lake Shore, has not had any plums for some years. This year he syringed the trees with Paris Green, and is going to have a large crop. The curculio does not seem to like it.

Geo. M. Everest, Plympton, Lambton: Trees are looking well; black knot appears to be disappearing from this locality.

James Lovell, Brooke, Lambton: The strawberry crop was good, but I notice for the first time this season that the plants are being attacked by some disease or insect. Some varieties escaped, while others were almost destroyed. The one most injured was Captain Jack, while the Sharpless and the Colonel Cheney, growing alongside, were uninjured.

Martin Wattson, Bosanquet, Lambton: Plums are good where attended to, but where not attended to they were destroyed by the curculio and are a total loss. Black knot is getting worse every year.

Alex. McD. Allan, Goderich, Huron: Plums are the largest crop we have had for years, there being scarcely any trouble from curculio. * * * The tent caterpillar has appeared during the past three weeks, but has been overcome easily. Trees are looking healthy, and, besides perfecting a good crop, are likely to be in a good position in ripened wood and perfect buds for the winter.

Henry Doupe, Usborne, Huron: There is a scarcity of fruit in this neighbourhood. Apple blossoms got injured by the frost about the last of May.

Robt. Russell, Greenock, Bruce: The most of the plum trees are dead, and since last report a great many apple trees have died, principally Baldwins and Greenings. The bark splits at the crotch and then the tree dies.

Peter Clark, Culross, Bruce: A great number of young apple and plum trees wilted and died this season.

John Douglas, Arran, Bruce: A great number of apple trees were killed by the extreme frost in the winter. A great many never leafed out, and many died after leafing. The loss in this section in that way this year is more than in all other years put together.

John Cameron, Holland, Grey: Plum trees did not get over the shock they got two years ago, the old trees being all killed. However, young trees are coming on and bearing a few.

Archibald Brown, Keppel, Grey: The fruit trees in this section were severely injured last winter by the frost, especially Baldwins and Rhode Island Greenings.

Geo. Buskin, Artemesia, Grey: The bark on apple trees loosens, and the tree withers and dies.

Geo. Sneath, Vespra, Simcoe: Quite a number of apple, plum and cherry trees have died this summer, it is supposed through the effects of the hard winter.

Wm. Brown, Blenheim, Oxford: Bartlett pear trees almost killed. Flemish Beauties stood the winter well.

C. Jarvis, Brantford, Brant: Fruit trees and vines have stood the winter first rate; only the mice have done much damage by girdling many young trees, but that can be remedied by early attention in most cases.

Wm. Douglass, Onondago, Brant: Our apple orchards are all doomed. Mine have been dying for two or three years. In an orchard of 75 trees I shall not have eight barrels of apples.

R. Hayward, Arthur, Wellington: Black knot has ruined most of the plum and cherry trees.

John Black, Eramosa, Wellington: Fruit of all kinds very scarce: trees dying in great numbers.

David Spence, Amaranth, Dufferin: The high winds that prevailed when fruits were setting did a great injury to apples, pears, plum and cherries; and the blossoms were nearly all blown off, which will cause a scarcity of these fruits.

E. D. Smith, Saltfleet, Wentworth: The canker worm was bad on apple trees, but was largely destroyed by spraying with Paris Green. Foliage of pear trees injured somewhat by pear tree slug. Plums promise an immense crop, though the present drought is causing overladen trees to drop their fruit. The curculio is

not numerous enough to greatly thin the fruit on Lombards and other heavy bearers. Grapes promise the heaviest crop on record: many pests and diseases are commencing, but they are not serious yet; some hundreds of acres planted in grapes in this township.

J. Murray, Esquesing, Halton: Many apple trees have died throughout this section: I have not been able to ascertain the cause.

D. Fotheringham, Whitchurch, York: young apple trees, of say five years growth, seem to have suffered from the severe winter, as many leafed out and then died.

Henry Glendinning, Brock, Ontario: The fruit trees have suffered very much since the last report. At that time they did not show the amount of damage done by the winter, but nearly every orchard shows some dead trees, and more in a sickly condition.

S. H. Stevenson, Pickering, Ontario: Pear trees are almost all dead or dying—the cause I cannot explain; the leaves turned yellow and began to die last year.

A McLean, South Plantagenet, Prescott: Plums better than for many years.

W. J. Summerby, Russell, Russell: There is a great crop of wild fruit this season—strawberries and raspberries in abundance.

John Wilson, Dungannon, Hastings: Apples very scarce. A great many of the trees received a blight just when the fruit was setting, which killed the fruit and withered the young leaves; but the trees appear to be recovering. It was not an insect of any sort that I could find.

John H. Delamere, Minden and Anson, Haliburton: A large number of the apple trees have died this spring and summer, from the severe frosts of last winter and spring.

Chas. R. Stewart, Dysart, Haliburton: There are so many wild raspberries in this district that it is to be regretted they are not systematically harvested and exported. Many tons weight might be exported. They can be obtained at 25 cents- the pail full.

A. R. Kid, Dummer, Peterboro': Caterpillars were in swarms here and stripped the leaves badly, where they were not destroyed.

Nelson Heaslip, Bexley, Victoria: Many apple trees set out several years have died this season—the supposed cause being the excessively cold weather of last winter.

Thomas Smithson, Fenelon, Victoria: Quite a number of apple trees died last spring, after they came out in leaf. The Ironclads and Russian varieties look healthy and are loaded with fruit. In fact they are the kinds to plant in this range of townships, or north of it.

Wm. Ramsay, Mariposa, Victoria: There are a great many trees dying this summer. I think it was caused by the few warm days we had in April causing the sap to start, and the weather then turning so cold that the sap was frozen between the bark and the wood.

Moses Davis, Morrison, Muskoka: I have tried the Lombard plum, Early Richmond Cherry, and Champion and Brighton grape and succeeded with none. I am raising mulberry plants from seed. A great many fruit trees in this section were killed in the hard winter.

FROM THE NOVEMBER REPORT.

W. G. Morse, Mersea, Essex: With the exception of peaches, the fruit trees look well. There is no injury from storms, blight or frost, but the insects are doing considerable damage, especially to apples, much of the fruit falling off when half grown.

Robert Cumming, Harwich, Kent: A large quantity of winter apples is being shipped from this county to Winnipeg and Montreal.

George Russell, Yarmouth, Elgin: Apple trees were badly damaged by a hail storm in June.

Samuel Williams, Southwold, Elgin: Apples are in abundance; many are being fed to hogs, there being no market for them.

John A. Campbell, Windham, Norfolk: Fruit trees are recovering from the effects of the extreme cold of the past two years.

Joseph Martindale, Oneida, Haldimand: The condition of fruit trees is better than it has been for years. The only pests are the borers.

John Senn, Oneida, Haldimand: Old trees are doing badly; many are dying. The younger ones are in prime condition.

J. B. Hobbs, Warwick, Lambton: The apple crop is excellent. There are about 8,000 barrels for export in this township.

B. B. Smart, Sarnia, Lambton: Lots of curculio, but those who sprayed or syringed their trees had a good crop of plums. Large quantities of fall and winter apples are being shipped to the North-west and to England.

James Watson, Moore, Lambton: The heaviest apple crop ever grown in this section. Frost and rains prevented the fruit from setting the past two years, and the codling moth was almost starved out, so that the crop escaped its ravages this season.

D. S. Robertson, Plympton, Lambton: In the history of this township and others as well, there never was such an abundant crop of apples.

Martin Wattson, Bosanquet, Lambton: Carpocapsi pomorella very bad, where hogs and sheep do not feed in the orchards.

G. Edwin Cresswell, Tuckersmith, Huron: Owing to the large number of young orchards coming into

bearing and young trees planted out, the crop of 1885 will not fall more than 20 per cent. below that of 1884. Thousands of bushels of fall apples were fed to pigs and cows, made into cider, or left to rot in the orchard.

John Beattie, McKillop, Huron: A large quantity of apples have been shipped from the county of Huron, principally to Manitoba.

John Scott, Howick, Huron: Pear trees are dying from the blight of 1884.

A. McD. Allan, Goderich, Huron: The loss by insect pests has been very small, and mostly confined to sections or orchards which are neglected; fruit in cultivated, well drained and manured soils being of extra fine quality this year. Scarcely any damage has been done this year by blight, and none by frost. The only storm damage has been in fallen fruit, but this is as often a benefit as otherwise, as the worm-eaten specimens are generally more liable to fall than the clean, sound specimens. There has been a surplus of all fruits—a large surplus of plums and apples, and the quality is extra fine.

John Douglas, Arran, Bruce: Last winter left every orchard with a number of dead and dying trees in it, but the survivors have done well. There is less loss from insects this year than for many years.

R. Gillies, Sullivan, Grey: The following grapes have ripened here this season: Champion, Concord, Moore's Early, Rogers No. 3 and 15, and Worden.

Henry Atkey, Keppel, Grey: I would suggest that much of the destruction of apple trees arises from ignorance of the proper varieties. Information on this point is much needed.

Alexander Stephen, Sullivan, Grey: Last winter killed thousands of trees in this neighbourhood, some orchards being nearly all destroyed.

John Mackenzie, Sarawak, Grey: Along the shore trees are good, and the crop good. Back in the country frost last winter damaged the trees.

John Cameron, Holland, Grey: A considerable number of trees have died from some pest or other; I believe it was the borer. The trees turned black near the ground, and the bark peeled off.

Jasper Martin, Medonte, Simcoe: The effects of last winter are still to be noticed in dead trees scattered through orchards. The tree borer is the worst pest. There is a very good crop of fall apples, but winter apples are scarce. Winter fruit does not appear to do as well as early and fall apples in this part.

James Robertson, Nottawasaga, Simcoe: Some trees decaying owing to fire blight.

James Alexander, Ekfrid, Middlesex: Fruit trees suffered considerably from the severity of last winter, more so than they have done for the last twenty years.

Wm. A. Caverhill, Lobo, Middlesex: More apples will be shipped from here than ever before in a single season.

Joshua Irvine, Lobo, Middlesex: Several thousand barrels of apples are being shipped from this township, at $1 a barrel for winter and 75 cents for fall.

R. W. Giffin, West Nissouri, Middlesex: A large percentage of apple trees have been blighted—I think about 75 per cent. One of my neighbours trimmed his orchard heavily as soon as he discovered the blight, and I think with good success.

James A. Glen, Westminster, Middlesex: The apple trees have not done as well as formerly; the severe frost of last winter killed a number and injured many more. The Golden Sweet suffered most and the Spitzenburg next, while the Spies, Russets and Greenings are very thrifty. The snow apple, St. Lawrence, Spitzenburg and Rambo are spotted and cracked. I do not think that insect pests were so numerous as formerly.

Peter Stewart, West Williams, Middlesex: Those trees that survived the frosts of last winter seem all right, but a great many trees were then killed, some orchards losing 14 or 15 trees.

M. W. Schell, West Oxford, Oxford: Apples were never freer from the codling moth.

C. Jarvis, Brantford, Brant: The curculio is not nearly so bad as formerly: perhaps it has been starved for want of plums, as there were none last year. We had a good dose of them this year.

William Courtice, Fullarton, Perth: Some of the trees in some young orchards are dying: I do not know the cause.

John Booth, Maryborough, Wellington: A great many of the fruit trees appear to be blighted.

Walter Quennell, Minto, Wellington: A good many young fruit trees have died, supposed to be in consequence of the severe winter of 1884-5.

James Wilson, North Dumfries, Waterloo: A good many branches of apple, pear, cherry and plum trees still continue to die off, and the whole tree sometimes becomes so affected that it dies altogether. In my own orchard there have been fewer insect pests this season than for a considerable time past. There are comparatively few wormy apples.

Benjamin Devitt, Waterloo, Waterloo: Apple trees are in a bad condition, having been frozen in spring after the sap had risen. Blight has about left our section. The plum and cherry trees are nearly all gone.

Edward Halter, Waterloo, Waterloo: Fruit trees are dying off every year more and more, and trees which are planted where old ones died will very seldom grow. I believe farmers should plant new orchards, as young trees will not grow in places where old trees have died.

George Risk, Wilmot, Waterloo: Many apple trees are dying. The bark splits open from the ground up to the limbs.

James Stull, Grantham, Lincoln: Young trees have made a great growth this season. Apples on clay are mostly all destroyed by the moth worm.

A. G. Muir, North Grimsby, Lincoln: Many tons of grapes are still hanging on the vines for want of

a market. It has become a vital question with many what to do with grapes, for quantities that were formerly made into wine are now thrown upon the market on account of the Scott Act.

George Hart, Saltfleet, Wentworth: The severity of last winter destroyed most of the pests.

E. D. Smith, Saltfleet, Wentworth: The condition of trees and vines is first-class. They made an extra fine growth this year—the best I ever saw. Insect pests generally did not do as much damage as usual. Grapes suffered badly from mildew and rot. Large quantities of fruit have been exported, especially grapes, of which about eighty tons have been shipped from Winona station alone.

Wm. McDonald, Esquesing, Halton: The codling moth has not been so bad as it was a few years ago.

James A. Newlove, Albion, Peel: About one-half of the apples blown off by high winds.

J. D. Evans, Etobicoke, York: Considerable codling moth in the apples, and wind storms have shaken off a great part of the fruit prematurely.

D. B. Nighswander, Markham, York: Fruit trees are in good condition, except pears, which are dying off considerably.

Henry Glendenning, Brock, Ontario: Fruit trees have suffered very much from last winter's frost. The full extent of the damage was not visible until the autumn. Large numbers of trees that looked healthy in the spring now show to be badly diseased about the base of the limbs, and are being attacked by the borers. The fruit is freer from the codling moth than it has been for years.

Robert Hodge, sr., Clarke, Durham: Quite a large surplus of apples has been shipped to the English market.

C. A. Mallory, Percy, Northumberland: Fruit trees are in fair condition, except cherries and plums which are being destroyed by black knot. The fruit was blown to the ground more than usual by winds and storms.

Louis P. Hubbs, Hillier, Prince Edward: Plums and common pears rotted by the bushel for want of a market.

C. R. Allison, Fredericksburgh, Lennox: Fruit trees are in very good condition, particularly apples. They have not been hurt by insects so much as for several years past, but the fruit, particularly apples, was injured by frost while in blossom.

Joshua Knight, Storrington, Frontenac: A large surplus of apples, plumbs and berries of all kinds.

Isaiah Wright, Augusta, Grenville: Great supply of apples and plums—far beyond what is required for local consumption.

Gideon Fairbairn, Edwardsburgh, Grenville: Farmers have had great difficulty in disposing of their apples, and in some cases have fed large quantities to hogs.

G. F. Benson, Edwardsburgh, Grenville: Plums seem to have proved the most successful crop this year.

Alexander Thomson, Yonge, Leeds: We are feeding apples to cows and hogs.

James Cattanach, Lancaster, Glengarry: The fruit crop was the best we have had for years.

James Wylie, East Hawkesbury, Prescott: Some apple trees are dying; worms are found in the roots.

W. P. Taylor, Fitzroy, Carleton: Fruit trees from some (to me) unknown cause suffered much from last winter. We have never yet raised sufficient fruit for local consumption.

W. H. Berry, March, Carleton: Many trees die off without apparent cause—possibly from blight.

P. E. Bucke, Nepean, Carleton: Frost destroyed a large quantity of grapes, which had not ripened owing to the cool August and September months. Large quantities of fruit are imported from the West and the United States for local consumption. Collections of fruits have been made here and preserved in salicylic acid for the Colonial Exhibition in London, England, in 1886. The samples were very fine.

J. M. Kennedy, Alice, Renfrew: A great many apple trees died last spring. Those that were healthy yielded well. The apple tree borer destroyed a great many trees.

John Stewart, McNab, Renfrew: The bark louse and borer are doing considerable injury to some orchards.

Wm. Selkirk, Petewawa, Renfrew: We cannot get fruit trees to do well here. There is a small white grub that cuts the sap wood inside of the bark and kills the trees, and farmers have quit trying to grow them.

Thomas Smithson, Fenelon, Victoria: Fruit trees have a black appearance in the bark, which I think is the effect of hard frosts last spring. Some have died in almost every orchard; others appear as if they will soon succumb to the same cause.

John Fell, senior, Somerville, Victoria: Fruit trees were considerably killed last winter, it is supposed by frost, which was severe. Those surviving have borne heavy crops, and have been less infected by insects than usual.

John Maloney, Douro, Peterborough: The plum crop was nearly all destroyed by the curculio. The apple crop suffered considerably from the ravages of the codling worm.

A. R. Kidd, Dummer, Peterborough: Some of the plum trees have died in some sections. I attribute it to too much moisture.

James S. Cairnduff, Harvey, Peterborough: Apple and pear trees were blighted in the spring just after blossoming. Many of them put out fresh blossoms in August, and set fruit until the frost in September cut them off.

Moses Davis, Morrison, Muskoka: The severity of last winter killed a great many fruit trees. Those that escaped look well.

Stephen Brundige, Ryde, Muskoka: Fruit trees were nearly all killed by the winter frosts. In the spring the trees looked well, but as soon as the growth started they split in the bark from the ground right to the branches, and the tree withered.

Edward Bray, jr., Stephenson and Stisted, Muskoka: More fruit trees were killed last winter than in any previous one. It made no difference whether they were on light or heavy soil. At the fair held at Huntsville there were no apples exhibited this year except crab-apples. There were two exhibits of grapes. The borer killed some trees.

Henry W. Gill, Watt, Muskoka: A great many trees lost last winter have not been replaced. Some of our most prominent orchardists have become disheartened.

GENERAL REMARKS.

The following extracts are made from the General Remarks of correspondents:

FROM THE MAY REPORT.

R. C. Taylor, West Tilbury, Essex: An old gentleman in this neighbourhood says there has not been so much intensely cold weather in one winter for forty-nine years. Then, the black squirrels' toes froze in March while they browsed in the elm tree tops.

James Macfarlane, Dover, Kent: I know of only one farmer, whose lot is on the bank of the River Thames, who is doing any tile underdraining. We much need underdraining, but the municipal drainage which has cost us so much has hitherto failed to afford us suitable outlets.

A. J. C. Shaw, Camden, Kent: I have to complain as usual about the general neglect of farmers to improve their stock. I have seen since spring opened several scrub bulls and boars on the highways, which are no good to any person. There should be a law passed to have such animals confiscated and sold at public sale, and the funds placed to the credit of our township charities.

Jabel Robinson, Southwold, Elgin: Since the Ontario People's Salt Works have been running at Kincardine, salt for agricultural purposes is within the reach of the farmers. No doubt the action taken by the Granges relative to salt will be appreciated by the farmers throughout the Province.

Robert Garnham, Houghton, Norfolk: It is a very pleasant sight to see the birds, but they are scarce, and we believe the cause to be found in so many cats. Go into many houses and you will find from six to twelve of them. Tax the cats where more than two are found in one house, and take the tax off where there is but one dog, and that a true Scotch sheep dog.

John H. Best, Walpole, Haldimand: The farmers of this township are turning their attention to the manufacture of cheese, and raising less grain.

E. A. Dickout, Bertie, Welland: It would be well for your Bureau to impress upon the minds of farmers the perniciousness of the practice indulged in to so great an extent, of selling hay and straw off their farms. Ton after ton was shipped to Uncle Sam's domain from the county of Welland during last winter. In tones of thunder say to them that it is impoverishing their farms, and is condemned by all the best farmers in the Dominion.

James Dallas Bosanquet, Lambton: As the forest is fast disappearing, it need not be wondered at that our winters are becoming more severe. Shade and ornamental tree planting is well enough as far as it goes, but more attention should be given to protecting the natives of the soil by fencing stock out of the reserves, and allowing the young trees to grow beyond their reach.

Finlay Anderson, E. Wawanosh, Huron: The prices of grain have been so low that the people of this vicinity have erected a cheese factory and are going to keep more cows, believing it will pay better.

William Welsh, Huron, Bruce: The necessity of warmer stabling ought to be sufficiently impressed on all, after the very severe winter we have had; the greater comfort and saving of feed would soon pay for the extra expense. Underdraining ought also to be done everywhere on our clay soils, and it is not unlikely that three crops would pay for the labour.

Joseph McArdle, Proton, Grey: This township is best adapted for stock-raising, as grass, clover and all coarse grains grow well here, also roots. Our farmers are not particular enough about improving the stock. If some—and we have those that can afford it—would pay more attention to their stock and get some good thoroughbred bulls here, it would pay well.

John Darby, Vespra, Simcoe: A good reliable spring wheat, suitable for heavy soil, as the old Fife was, is much needed here.

James A. Glen, Westminster, Middlesex: This has been the longest and coldest winter and latest spring I have seen in the London district. There is a very marked increase in tile drainage. Cattle and wheat are our staple products, and I might mention dairy products, as a large number of our farmers are interested in cheese, and seem well satisfied with the returns from that source.

F. Malcolm, Blandford, Oxford: Many farmers in this neighbourhood have been trying to make beef and cheese keep company, but in almost every case they find that one is successful to the detriment of the other. Herds of cows have repeatedly given from 5,000 to 6,000 pounds of milk in this locality. It only needs a little observation to see that a pound of cheese is almost as easily made as a pound of beef. Of course it is a disputed question which pays the best, but it is quite evident to those who try the two together that neither is eminently successful unless at the expense of the other.

J. Hodgins, Hibbert, Perth: This is the latest spring since 1857; a great deal of seeding to be done yet.

W. Tegsworth, Luther West, Wellington: This is the most backward season in many years, and, without exception, the most trying on account of the shortness of fodder and the long and severe winter, followed by a cold, wet spring.

J. Connell, Minto, Wellington: If tiles and ditchers could be got at a reasonable rate, there is much need for them in this locality.

C. Nicklin, Pilkington, Wellington: The season has been rather singular on the whole. Frost was in very deep, and no spring rains to break it; snow-storms occasionally up to the 10th May. Land sodden and sticky, consequently a late seeding; no growth of any account until after the middle of the month, and rain is needed before vegetation makes much headway.

R. Rennelson, Dumfries North, Waterloo: The disease amongst lambs, to which I referred, is, I suppose, called goitre. We see less or more of it every season on some farms, while on others it is unknown; and now and again it makes its appearance on a farm where they have long been healthy. No ascertained system of treatment seems to be proof against the trouble.

H. Liersch, Wilmot, Waterloo: Flax seed has been sown to an extent of from 200 to 250 acres.

J. Reith, Luther East, Dufferin: The spring has been very backward. I sowed on the 29th of April and on 1st May, but had to stop until the 11th. The frost and cold weather of the last ten days have done more harm to winter wheat and clover than the winter did.

Albert Pay, Grantham, Lincoln: This district or township is largely planted with fruit, and more attention is given to that than to grain or stock.

R. Postans, Trafalgar, Halton: The past winter will long be remembered by bee-keepers if not by others. The cold began very early and kept on with unusual steadiness. Many lost all or nearly all the swarms they had: I lost one-half. Though so cold, it has been an easy winter on some things that usually suffer, such as wheat and clover.

A. Forster, Markham, York: Every one seems to think this is the most backward spring they ever remember; it is certainly the latest seeding. I think the cause was that the frost, being so deep in the ground, did not get thawed out until just lately, keeping the water from getting into the drains.

John Foott, Hope, Durham: the prospects of the farmer are not very cheering just now. Everything is in a very backward condition; winter fodder is almost exhausted, no pasture, and stock are in low condition. We never saw the land in such a bad state for receiving seed, and the advantages of well-drained land, natural or artificial, over undrained, were never so apparent as now.

Jacob H. Roblin, Adolphustown, Lennox: There was ice on the Bay of Quinte on the 1st of May. The oldest settlers say such a thing was never known before.

J. A. Russell, Bastard, Leeds: On April 28th about a foot of snow, and sleighing was good; on May 4th more snow, with rain.

Gideon Fairbairn, Edwardsburg, Grenville: Six inches of snow fell on the 28th of April, and the weather continued cold and backward up till the 12th of May; but, for the last three days the weather has been delightful and the ground is drying rapidly.

E. L. White, Winchester, Dundas: The cheese business is progressing here; two or three new factories have been started in this township, and farmers are turning their attention to cheese instead of butter.

D. McDiarmid, Kenyon, Glengarry: A greater quantity of snow fell than usual last winter; the cold weather kept on till about the middle of April, when we had the greatest snow storm known for forty years. Owing to the lateness of the season very little maple sugar or syrup has been made.

R. P. McDonald, Osgoode, Carleton: Dairying is receiving more attention than usual, judging from the number of cheese factories that have been erected. Bridges and sluice-ways have suffered very much from spring floods.

John Gibson, Bathurst, Lanark: We have had the longest, coldest, and stormiest winter ever known here.

E. Chalmers, Montague, Lanark: The present is the latest spring since I came to Canada, 48 years ago. The water is higher in the Rideau River than I ever saw it before.

Daniel Williams, Glamorgan, Haliburton: The present spring has been one with the lowest temperature for many years. During the fifteen years I have lived here I never knew the month of April to range below freezing point, as it has done this year. The last Tuesday in the month there fell an average of nine inches of snow, and we have had showers of snow and sleet as late as May 9th. The tardy vegetation and scarcity of hay has had a very bad effect on stock.

George W. Deller, Cardiff, Haliburton: Great improvement is noted among farmers here, especially in stock; also in their method of tilling the ground. As they had a virgin soil they have been very careless, but successive cropping has opened their eyes. The Reports of the Bureau of Industries have greatly stimulated them to fresh endeavours, arousing competition with other counties.

H. Reazin, Mariposa, Victoria: Frost was never known to enter so deeply. My tile drains on high land are frozen up. I have seen the frost four and a half feet deep and a three-inch tile drain at that depth on level land frozen solid. The frost will not be out till June. This occasions the water to remain and keep the land wet.

A. Howkins, Eldon, Victoria: I have been farming quite a number of years, but in all my recollection never was there such a scarcity of feed. Some farmers took their cattle to the woods and cut down trees for them to eat the buds. From $3 to $5 could be got for a load of straw and $16 and $17 for a ton of hay.

John Hollingworth, Watt, Muskoka: Last summer's crop of hay and straw was short, and although there was considerable left over from the previous season, the unusual demand created by railroad construc-

tion soon cleared all out that was held by farmers who were fortunate enough to have it to dispose of, and this spring hay has fetched a price never before known here, $25 a ton. Many of the farmers had not enough fodder for their stock, and at any price feed has been difficult to obtain. Many horned cattle and sheep have died, owing to want of food.

R. T. Lyon, Tekkumah, Algoma: A large trade has been done on this Island in cedar posts, ties and poles, which has kept the farmers employed during the winter. The spring has been very late, but the ground is now in excellent condition, and a large area has been seeded in a very short time.

Robert F. Ogle, Carnarvon, Algoma: With the adjoining township this is the best section of the Island, containing more good land, unbroken with flat rock, than any other part of the Manitoulin. The farmers in general are of the poorer pioneer class; good men with an axe, but poor hands with a plough, and altogether behind the times. Therefore stock-raising and agricultural is not what it otherwise should be, considering the natural advantages of the soil and mild summer climate. For health our Island is second to no other place on the continent.

FROM THE AUGUST REPORT.

James McClive, Bertie, Welland: Our township is overrun with weeds. The plantain is becoming a great curse, covering the whole fields; in fact, if a change is not soon affected, weeds will completely destroy all crops of grain and hay.

D. S. Robertson, Plympton, Lambton: Thistle cultivators (more aptly termed cultivators for destroying thistles) wanted very much. I see none advertised.

Martin Wattson, Bosanquet, Lambton: Flax is a good crop. We have a flax mill here and this year the proprietors have over 300 acres under culture amongst the farmers in the neighbourhood.

W. Milne, Osprey, Grey: It is highly important that farmers should understand the habits of the cut worm, as it frequently destroys large quantities of grain and root crops. All I can find about it in the Report of the Agricultural Commission, is that "it hides under rubbish in the daytime and comes out at night." It destroyed more than one-half of my turnips and of several of my neighbours', just as soon as they came up. I hand-picked two acres, digging them up from under the surface where they borrow through the day, finding on an average one to the rod. This saved the balance of my crop and I re-sowed where cut off. The field has now a large plant here and there with small ones between. Now, if I knew the habits of this insect I might be able to stay its ravages. For instance, if it lays its eggs on green leaves early in spring I would be careful to have my turnip land ploughed early in spring, and keep down all green leaves, so that it would not have the chance to live for want of plant food. The wire-worm is another destructive insect, of which little or almost nothing is given in the Report of the Agricultural Commission, or in the Report of the Fruit Growers' Association.

Wm. Brown, Agricultural College, Guelph, Wellington: The extraordinary rainfall on the 3rd and 4th of August has done immense damage to all grain crops, most to partially matured crops, such as oats and corn. In fact this rain has completely upset all calculations as to quantity and quality. Barley must be largely damaged in colour, though as with fall wheat, being matured, will bulk well. The wind with the rain as it fell twisted and laid the grain flat to the ground. If, therefore, breezes and sunshine do not follow immediately, the greater portion will never rise and harvesting will be very difficult.

Robert Anglin, Pittsburg, Frontenac: The crops would be much better if farmers would do more summer fallowing to kill weeds, etc. I think I am safe in saying that fully one-quarter of this township is lost, being occupied by all kinds of noxious weeds, and this is getting worse from year to year.

Alex. Buchanan, South Gower, Grenville: All sorts of implements except self-binders in use; but next year or so, when farmers have to buy new machines, they will invest in self-binders.

D. McDiarmid, M.D., Kenyon, Glengarry: The great length of time required last winter and spring to feed hay and straw to cattle, with the addition of a supply of both much below the average obtained from last year's growth, caused the whole to be consumed, so that there is no previous year's supply on hand to feed the increased number of cattle now kept on account of the great number of cheese factories erected throughout the country. The usual price of hay is from $8 to $10 per ton; this rose to between $14 and $16 towards spring. A slightly better hay crop and a promised large supply of straw have removed the anxiety felt as to the cattle food supply for the approaching winter.

A. Schultz, Sebastopol, Renfrew: The mortality among trees last winter was fully ninety per cent. Some lost all they had, but they have been building up again. Spring was too cold for trees. Bee pasture is very good now, and the honey harvest is better by far than it was last year.

FROM THE NOVEMBER REPORT.

J. R. Stobbs, Romney, Kent: Quite a number are selling their apples at $1 per barrel. Crops of all kinds have been up to the average in our township. There are very few self-binders used to take off the crop, although quite a number are talking of getting them.

Edmund B. Harrison, Howard, Kent: What about the advisability of making each one fence in his own animals, and thus do away with road and line fences, which are costly to put up and keep in repair, which harbour noxious weeds and keep a great deal of land out of cultivation?

John L. Sherk, South Dorchester, Elgin: As we cannot compete with the North-West in raising wheat, I think the farmers of Ontario would do well to turn their attention more to rasing good stock—both horses and cattle. People are breeding heavy horses lately, but they should be careful and not go too far. In a few years driving horses will be scarce and command high prices.

J. [illegible] Walpole, Haldimand: I am sorry to say that the Canadian thistle and ragweed are not kept in [illegible] be.

Wm. Parker, Stamford, Welland: I had 61 bushels of bright barley to the acre.

J. A. Ramsden, Humberstone, Welland: On the whole, the year 1885 has been a very discouraging one to farmers,, crops being injured badly by the wet weather. With farm labour comparatively high, and extremely low prices for stock and produce, the outlook for farmers is very discouraging.

James Thomson, Warwick, Lambton: A good deal of wheat that is sowed this fall is put in in poor condition. Because the crop was good this year, it is put in in all kinds of ground with the expectation of a good crop another year. What fools some farmers are!

R. Fleck, Moore, Lambton: The season of 1885 will be remembered as producing, on the whole, the finest crops ever harvested in Lambton.

Silas Mills, Moore, Lambton: Never in the history of our township have so many apples of choice quality been shipped.

George Shirley, Brooke, Lambton: A large amount of money is being paid out here for apples alone. There will be shipped from Watford station at least 20,000 barrels.

Finlay Anderson, East Wawanosh, Huron: A great number of farms are offered for sale in this township. Owing to low prices for farm produce and cost of living, real estate is depreciating in value.

Robert Russell, Greenock, Bruce: Owing to the failure of the spring wheat, a great quantity of fall wheat has been sown.

Peter Clark, Culross, Bruce: The continued low price of grain is a serious drawback to the farmer. Live stock is lower in price at the present time in this section than it has been for many years. How and when a change is to come it is hard to conjecture.

Thomas Kells, Artemesia, Grey: For some cause which I do not undertake to explain, wheat, and especially spring wheat, no matter how well adapted to soil and climate, will only do well for a limited time. The Glasgow or Red Fife did well for a while, but it fails to yield an abundant crop. The Red Chaff yielded for a time, but has had its day. Then the White Russian was introduced and did well for a time, but it is now evident it cannot be much longer cultivated and reasonable yields realized. And, as we know of no other hardy varieties being introduced, what is to be done? Would it not be well for our leading men, who control the finances of the Province, to adopt some plan whereby new varieties of seed, suitable for the country, could be supplied to the farmers at a reasonable price?

Wm. Elliott, West Williams, Middlesex: Taking the township at large, I am of opinion that farm produce has been equal to, if not greater than, last year's yield; fruits, excepting apples, are less, and live stock more numerous and in better condition. Prosperity seems to advance.

R. A. Brown, West Nissouri, Middlesex: The industry of the apiarian is like that of all other branches of farming: where wisdom, forethought, skill and plenteous labour are bestowed, there is a margin of profit always, although there do come years of adversity like the one just past.

Malcolm Campbell, Ekfrid, Middlesex: A very good season on the whole; people busy improving their farms with tile-draining, and building brick houses.

James Anderson, East Zorra, Oxford: On the whole, the hardest year since the Bureau started: much more pleasant to report when crops are good. Fall wheat and hay are about the only crops we have.

W. M. Ryan, Dereham, Oxford: As this was an extra late spring, farmers to a certain extent were prepared for a bad year, and, as the farmers of this section practice mixed farming, what will be lost in one branch of the business will, I have no doubt, be made up in another. As wheat and cheese are the staple productions of this part of the country, a low price in both products will be a serious drawback. Wheat will be a fair price, but as regards cheese the farmers of this section this year will not make the interest on the money invested in cows.

Alex. Bryce, Brantford, Brant: People are going into mixed farming more than formerly, and it is paying better. I do not think the land is farmed as well in this vicinity as it should be; consequently the crops are not as good as the richness of the soil would warrant.

Horace Chisholm, Brantford, Brant: Prices for machinery are high when compared with the results of the crops. The amount of interest which the farmer receives for the capital invested will not bear the pressure; the proportion is too great.

Geo. Follis, Wallace Perth: On account of the fall wheat being good this year people have sown a good deal of land in a very poor state this fall.

Wm. Brown, Guelph, Wellington: A prominent feature of general farm management is, the non-speculative men feel comfortable, and are waiting what time will develop as to special lines.

Isaac Groh, Waterloo, Waterloo: Barley is mostly fed on the farm; so are pease, rye and oats, for the reason that farmers begin to realize unless land is fed it cannot produce.

David Spence, Amaranth, Dufferin: This will be a trying year on many, as what spring wheat people had is not saleable. If it had not been for fall wheat and barley, a great many people would be very hard up, for last year's crops being poor and prices low all who had stock on hand had to part with them, causing the supply on hand now to be very small.

John H. Lindebury, Clinton, Lincoln: We have had rather a prosperous year. The crops have been good—grass short and winter wheat good: beeves bring a good price, and grain though low is rising in value, and I think we have no reason to complain.

Robert Shearer, Niagara, Lincoln: The season has been a good one in general. The only crop that has suffered serious injury is potatoes, from rot.

Robert Inksetter, Beverley, Wentworth: This has been a very unfavourable year for farmers; the weather has been unseasonable and the damage considerable; consequently our expenses have been greater, while at the same time the price of nearly everything we had to sell has been below cost.

Ramsay McNeil, Flamboro' West, Wentworth: Except for the potato rot, farmers are well satisfied.

Colin Cameron, Nassagaweya, Halton: Much has been done in the last few years in the way of cleaning the land and preparing it for crops. Very few farmers think of sowing grain on land ploughed in fall, unless cultivated or cross-ploughed in spring.

R. Postans, Trafalgar, Halton: What is the next new weed to be introduced? Only a few years ago the ragweed made its appearance on my place, and in spite of close watching it is spreading, stray plants appearing here and there, the seed evidently having been dropped by birds. And now, worse still, the wild flax has got a foothold, with its myriad of small seeds that would pass in alsike clover seed without notice. I have about ten bushels of timothy seed from the wheat crop this year, and will have to chop the wheat for feed, as I will neither sow nor sell it.

John Sinclair, Chinguacousy, Peel: There is a great scarcity of good ploughmen. The country is flooded with a class of men who can handle the fork, or dig, or beg; but when asked, "Can you plough?" the answer almost invariably is, "No." As I consider good ploughing to be the very basis of good farming, it is important that farm servants should learn to be good ploughmen.

D. James, Markham, York: While the profits on the farm during the past two years have been small, farmers appear to have confidence in their occupation, as the price of land has depreciated very little. Their profits being small, farmers are more careful how they expend and invest their money. They are just now receiving a good education, which will be of great advantage to them all through life.

Joseph McGrath, Mara, Ontario: Farmers are greatly improving their places in regard to buildings, a great many having gone up this year. There are great complaints of hard times, and I think they will be bad this winter.

James Mackie, Uxbridge, Ontario: The farmer who uses the most improved implements and stock has always the best improved farm, which gives the best crops, and these fetch the best prices, and there is consequently no grumbling.

James McLean, Cavan, Durham: The prospects are not encouragiug. I am afraid this will be a hard winter for labouring men, unless the Government go on with some public works to help the poor.

H. A. Walker, Hope, Durham: our township is getting very foul with weeds. I would advise every farmer to summer-fallow one field every year well, and if necessary drain it well, so as to get the whole farm done every six years. We require a great deal of draining. Many fields are part wet and part dry, which prevents sowing crops until it is too late.

Platt Hinman, Haldimand, Northumberland: More than three-fourths of the community seem hard up. Many improvements would be made if they could be afforded. Low prices for all produce cripple the farmer; then all must suffer.

A. J. Brooks, Sophiasburg, Prince Edward: Farming has been very backward work this year, and the prospect is very poor for another year. This old county does nothing much but raise barley. There is no enterprise in the farmers. Good stock is not raised to any extent, unless it is a few good horses.

W. H. Montray, Amherst Island, Lennox and Addington: On the whole this is a poor season for the farmers of this district. The barley is of poor quality, and it is the grain they most depend upon. Cheese is low in price, and potatoes a complete failure; large patches altogether rotten.

M. Spoor, Wolfe Island, Frontenac: Unless some steps are taken by the Government, or otherwise, to introduce foreign labour, farming in this locality must cease to a certain extent, owing to the want of labour and high wages. Portions of my crop have been lost on the field before they were housed for the want of help, while others, after paying excessive wages to harvest the crop, find themselves either in debt or with nothing left, as the present prices will not afford such high wages.

A. Abbott, Elizabethtown, Leeds: A good many farms have been sold this year at good prices—average about $80 per acre. I sold fifty acres for $75.

G. F. Benson, Edwardsburgh, Grenville: The crops in this section have altogether been good this year, with the exception of the potato crop, which has been almost a total failure owing to the prevalence of rot. There seems to be a surplus of hay and grains of different kinds, while the lands are in good shape for next season's crop.

Alex. Farlinger, Dundas county: Farm lands increasing in value, rents of same higher, farmers very much more intelligent—read and think more actively. Very few sales of farms; farmers' sons anxious to buy and settle down in this locality, saying they do not find anything abroad to equal lands and climate here, and that the maturity of stock here is not excelled. The valley between the St. Lawrence river and the Ottawa is part of the garden of Canada; people as well as stock have great powers of endurance.

W. J. Summerby, Russell, Russell: All grains promised an abundant yield, but farmers are disappointed when they thresh. They have less grain, and of a poorer sample than expected.

Thomas Roche, Hagerty, Renfrew: From actual experience here early sown crop is the most profitable, and to facilitate that object everything that possibly could should be done this fall, such as draining, ploughing, manuring, etc.

J. G. Baird, M.D., Pakenham, Lanark: All agriculturists are well pleased with yield of farm produce this year excepting spring wheat.

John A. Jackson, Eldon, Victoria: This has been and is likely to continue a hard year with farmers. Still they are not wholly discouraged. Farm lands sell and rent about as well as they have for the past few years.

Dan Williams, Glamorgan, Haliburton: Present outlook for the farmer is very gloomy; especially is this so with cattle, for which there appears to be no market. Cattle of ten years old and upwards which a year since were sold at a remunerative rate are not now in demand, and will probably remain in their owner's hands for another year. This is partly owing to the depressed state of the lumber trade, which largely controls the price in this vicinity.

George Wm. Deller, Cardiff, Haliburton: The one great fault here, as in backwood townships generally, is "too many irons in the fire at once," and consequently the farm usually suffers. For instance, one man here can't find time to draw all his manure, while he fully realizes the value and the need of it. The practice here is to attempt too much, and as the inevitable result, to do nothing.

Arthur W. Bartlett, Monteagle, Hastings: Farming is done here generally in the roughest possible way, as much of the land is new, but considering the treatment, with good success. But fall wheat is almost sure to winter-kill. Barley does well, but is not grown as there is no demand for it.

Stephen Brundige, Ryde, Muskoka: We have a new township, therefore we don't plough so much. The less we plough the better for us. I only plough when the grass fails; it pays the best to sell the beef and mutton and spread the manure on the land in the shape of top-dressing. It doubles the crop.

J. M. Ansley, McDougall, Parry Sound: This vicinity suffered from want of seed grain in the spring, consequently had to wait for supply until navigation opened. It was then too late to take advantage of early sowing. Next year this matter will be remedied by the majority of the farmers laying in their supply of seed required for next spring before navigation closes this fall.

PART II.

LIVE STOCK, THE DAIRY AND THE APIARY.

LIVE STOCK.

Owing to the severe strain of a long, cold winter, followed by a late and backward spring, in which pastures made rather a poor start upon the season's growth, live stock of all kinds began the season in a condition far from promising. They had come through the winter on a barely sufficient supply of fodder, while in portions of Bruce, Grey, Simcoe, Muskoka, Parry Sound, and other northern districts, where a severe drought had attacked the pastures in the previous summer, such a state of scarcity prevailed that hay sold in March and April at $15 to $25 per ton. A large quantity of pressed hay was sent into these districts over the railways, but the demand was only supplied in part, and many animals died of starvation. In the Lake Erie and most of the West Midland counties, on the other hand, hay sold at $5 to $10 per ton, and all classes of live stock were well fed, more especially as coarse grains were plentiful and the market prices for them very low; while in the Lake Ontario and St. Lawrence and Ottawa counties, the surplus of hay in farmer's hands from 1883 enabled them with economy to save their stock in a healthy though reduced condition. But spring and summer favoured a speedy and good recovery. The abundant showers which fell at intervals over the greater portion of the Province more than compensated for preceding drawbacks, and generally speaking the result has been that "the year grew lush in juicy stalks," with correspondingly good effects upon live stock. There have been some exceptions, however. In some counties, or parts of counties, especially in western and northern Ontario, pastures were considerably thinned by the heat and drought of July. This was succeeded by copious and frequent rains, under which they revived rapidly. In the Lake Erie, Lake Huron, West Midland and Lake Ontario counties fall pastures were with few exceptions luxuriant: indeed a good many correspondents stated that the excessive rains, while stimulating a heavy growth, rendered the grass deficient in nutriment. In other sections, as in Bruce and the Georgian Bay, St. Lawrence and Ottawa, East Midland and Northern districts, pastures were much more susceptible to the dry weather of September and October, which, with a rather low temperature and some frosty nights, left them in most cases comparatively short and bare. The absence of clover and of mixed grasses as against pure timothy is occasionally alluded to as a cause of poor pasturage, and the depredations of grasshoppers are complained of in some localities.

The condition of live stock has corresponded generally with the condition of the pasturage. Where the latter was abundant all animals were reported as plump and thrifty, and *vice versa*. But even where they were thin in flesh they were remarkably healthy: the temperate summer, with no great extremes of heat or cold, and the open fall having been in every way favourable to them. At the close of the season horned cattle were reported to be absolutely free from disease of any kind.

Many horses succumbed to distemper in the spring in the western and south-western counties, but otherwise they have had a favourable year. There was also a large mortality among young pigs, caused no doubt by the severity of the weather at the time they were dropped; in many cases whole litters were lost. Toward the end of summer, too, hog cholera prevailed pretty extensively in some western localities, but it gradually disappeared with the approach of winter. The reports as to sheep are not entirely favourable. In many cases not only did they suffer from the effects of an unusually trying winter, many lambs dying at birth, but the abundant moisture of the summer, which proved so advantageous to other live stock, was rather unfavourable to sheep, which prefer drier weather and less luxuriant pasturage.

In the matter of stall-feeding, the customs of the farmers of Ontario differ very much, being affected largely by the general character of their products and the local condition of the markets. Where there is plenty of good pasturage, as in the newer districts of the country, or where stock-raisers are content to supply the demands of the local trade only, animals are generally sold off the grass, and very little winter fattening is attempted. On the other hand, farmers who grow large quantities of coarse grains and roots are encouraged to stable their stock to meet the pretty constant demand of the export trade.

With regard to the prevailing breeds of cattle, the farmers of Ontario continue to pursue the policy of cultivating such strains as combine the highest beefing with the highest milking qualities. The Durham grade, that is, the product of pure sires and native females, predominates by far over every other breed; the weight of testimony favours it as the most profitable in a mixed system of husbandry. In several of the St. Lawrence counties, and in a few western localities, where the dairy industry has reached such proportions as to justify farmers in selecting cows for their milking qualities alone, Ayrshires and Jerseys, and grades of these with native stock or with Shorthorns, are frequently found. The Holstein, too, appears to be rapidly growing into favour among dairymen. The Devon and the Hereford, as well as the the much despised Canadian, have also their advocates for dairy purposes.

The market for live stock during the year was inactive, a comparative absence of demand and low prices being the rule. As a correspondent tersely expressed it: "The prospect of supplies for market is a great deal better than the prospect of a market for the supplies." There were a good many sales of cattle off the pastures for the British market, but at the close of the season buyers were scarce and large stocks had accumulated in the hands of farmers. The number of horses in the Province increased from 535,953 in 1884 to 558,809 in 1885, and the number of cattle from 1,925,670 in 1884 to 1,976,480 in 1885. The number of hogs was diminished from 916,158 in 1884 to 822,262 in 1885, owing chiefly to the large losses in last spring's litters. The statistics of sheep also show a great diminution, there having been 1,890,733 in 1884 against 1,755,605 in 1885. Correspondents attribute this, first of all, to absence of demand and low price for wool, which render it unprofitable to maintain sheep for that product alone; and, in the absence of that source of revenue sheep, simply as meat producers, do not pay so well as cattle and hogs. The poultry in the Province have increased from 6,237,606 in 1884 to 6,336,805 in 1885.

The following table, showing the average number and value of live stock per 1,000 acres of cleared land in the various districts and for the whole Province, affords material for interesting comparisons:

Districts.	Horses.	Cattle.	Sheep.	Pigs.	Poultry.	Value.
Lake Erie	58.7	179.3	145.3	126.8	733.5	$9.771
Lake Huron	49.9	209.6	180.4	59.8	562.5	10.174
Georgian Bay	48.4	188.1	217.7	81.7	550.8	9.253
West Midland	51.2	201.7	157.7	71.6	590.3	10.454
Lake Ontario	54.7	141.7	124.5	73.4	553.0	9.212
St. Lawrence and Ottawa	47.9	186.5	180.3	61.5	580.4	7.753
East Midland	49.3	176.8	156.2	65.0	493.0	8.188
Northern Districts	36.8	258.5	184.1	82.1	551.6	9.691
The Province	51.5	182.1	161.7	75.7	583.7	9.275

The provincial averages for the four years, 1882–5, are: horses, 51.0; cattle, 172.2; sheep, 175.7; pigs, 82.7; poultry, 562.2; value, $9,091. Last year's average shows an increase in horses, cattle and poultry, and a decrease in sheep and pigs. The Lake Erie counties stand first in the number of horses, pigs and poultry per 1,000 acres, the Georgian Bay continues first in sheep, the Northern districts first in cattle, and the West Midland counties first in value. The apparent supremacy of the Northern districts in cattle is accounted for by the fact that the farmers of Muskoka and Parry Sound, while

generally having small areas of cleared land, are accustomed to pasture their cattle on the rich, natural and beaver meadows of that part of the country.

Some idea of the extent of the contraction in wool production last year may be found from the following comparison of the product for 1885 with the average annual product for the four years 1882–5 :

	Coarse.		Fine.		
	Fleece.	Pounds.	Fleece.	Pounds.	Total Clip.
1885	925,314	5,161,975	180,056	924,891	6,086,866
1882–5	982,684	5,357,840	172,724	880,507	6,238,347

The following table gives a similar comparison, by county groups and for the province, of the average pounds weight of wool per fleece :

Districts.	1885.		1882-5.	
	Coarse.	Fine.	Coarse.	Fine.
	lbs.	lbs.	lbs.	lbs.
Lake Erie	5.77	4.91	5.60	4.91
Lake Huron	5.74	5.34	5.68	5.37
Georgian Bay	5.69	5.16	5.46	5.22
West Midland	5.78	5.24	5.70	5.28
Lake Ontario	6.12	5.43	5.95	5.35
St. Lawrence and Ottawa	4.90	4.93	4.74	4.84
East Midland	5.29	4.90	5.17	4.87
Northern Districts	5.62	5.10	5.65	5.19
The Province	5.58	5.14	5.45	5.10

The provincial average for both kinds of wool for last year exceeds the average for the four years. For all the years the Lake Ontario counties have maintained the first place. Their average product last year exceeded the provincial average by about 9 oz. per fleece for coarse, and about 5 oz. per fleece for fine wool.

EXPORTS OF ANIMALS AND THEIR PRODUCE.

The exports of horses, horned cattle and sheep from Canada, by numbers, value and price, during the past ten years, are shown by the Dominion trade returns to have been as follows :

Year.	Horses.			Horned Cattle.			Sheep.		
	No.	Value.	Price.	No.	Value.	Price.	No.	Value.	Price.
		$	$ c.		$	$ c.		$	$ c.
1876	4,299	442,338	102 90	25,357	601,148	23 71	141,187	507,538	3 59
1877	3,306	779,222	93 82	22,656	715,750	31 59	209,899	583,020	2 78
1878	14,179	1,273,728	89 83	29,925	1,152,334	38 50	242,989	699,337	2 88
1879	16,629	1,376,794	82 79	46,569	2,096,696	45 02	308,093	988,045	3 21
1880	21,393	1,880,379	87 90	54,944	2,764,437	50 31	398,726	1,422,830	3 57
1881	21,993	2,094,037	95 21	62,277	3,464,871	55 64	354,155	1,372,127	3 87
1882	20,920	2,326,637	111 21	62,106	3,256,330	52 43	311,669	1,228,957	3 94
1883	13,019	1,633,291	125 45	66,396	3,898,028	58 70	308,474	1,388,056	4 50
1884	11,595	1,617,829	139 52	89,263	5,681,082	63 64	304,403	1,544,605	5 07
1885	11,978	1,554,629	129 79	143,003	7,377,777	51 59	335,043	1,261,071	3 76

The exports of horses show a very rapid increase in the first six years, from 4,299 in 1876 to 21,993 in 1881, from which they have gradually fallen back to 11,978 in 1885; yet a high average price has been maintained. In the exports of horned cattle there has been a steady and remarkable advance every year of the period, indicating the great expansion of our foreign trade in fat stock. From 25,357 animals in 1876, the number has multiplied to no less than 143,003 in 1885, nearly six times as many, or an increase in in the ten years of 464 per cent. But this statement alone does not reveal the whole extent of the added profit to the country; for, along with this extraordinary development in the bulk of the trade, the average price obtained per head has more than doubled—the increase being from $23.71 in 1876 to $63.64 in 1884 and $51.59 in 1885. The total value in the first year was $601,148, and in the last year $7,377,777—over twelve times as much, or amounting in the ten years to the enormous increase of over 1127 per cent., as compared with the increase in number of 464 per cent. From this may be inferred the great improvement that has taken place in the charac er and quality of the cattle exported, and, by implication, of the general stock of the country. The export trade in sheep also shows a good development, though, as was of course to be expected, to nothing like the extent of the cattle trade. The number of sheep exported has increased from 141,187 in 1876 to 335,043 in 1885, more than double, though the highest point was reached in 1880, when 398,726 were exported. The aggregate value has increased correspondingly, and the average price advanced steadily from 1877 to 1884, when it reached $5.07, after which it dropped last year to $3.75 per head. Our chief market for sheep is found in the United States. In this connection, the exports of wool from Canada for the ten years may be tabulated:

Year.	Quantity.	Value.	Price per lb.
	lbs.	$	
1876	2,907,229	933,601	$0.32
1877	2,476,484	698,974	.28
1878	2,445,893	707,319	.29
1879	3,013,587	691,894	.23
1880	3,619,181	920,923	.25
1881	1,404,123	409,683	.29
1882	1,053,305	246,657	.23
1883	1,375,572	280,530	.20
1884	1,501,031	310,060	.21
1885	989,925	196,178	.20

In the first five years the exports showed a large increase in the quantity; yet so great a fall in the price occured that, in 1880, 3,619,181 lbs. of wool sold for $12,678 less than 2,907,229 lbs. sold for in 1876. In the last five years, notwithstanding some feeble attempts to recover, the general tendency both in quantities and values has been towards decline. Comparing the last year with the first year of the period, we find that the exports in 1885 amounted to but slightly over one-third in quantity, and not much more than one-fifth in value, of those of 1876, while the average price fell from 32 cents per lb. in 1876 to 20 cents in 1885, a drop of 38 per cent.

The production of eggs for export has grown to be an important and profitable industry of Canada. Its expansion during the past ten years is shown by the following

statistics of the quantities and values of the annual exports from the whole Dominion, and the average price :

Year.	Quantity.	Value.	Price per dozen.
	Doz.		
1876	3,880,813	$508,425	$0.13
1877	5,025,953	534,891	.10
1878	5,262,920	646,574	.12
1879	5,440,823	574,093	.10
1880	6,452,580	740,665	.11
1881	9,090,135	1,103,812	.12
1882	10,499,082	1,643,709	.16
1883	13,451,410	2,256,586	.17
1884	11,490,855	1,960,197	.17
1885	11,542,703	1,830,632	.16

This is a very satisfactory exhibit, and all the more so as showing the double advantage to the country of an enhancing price simultaneously with an enlarging market. Thus, taking the first and the last year for comparison—although less favourable to a striking result than some others—1877 with 1883 or 1884, for example—we find that the quantity exported has nearly trebled, while the aggregate value has nearly quadrupled. This is the result of a rapidly growing demand in the United States.

The following table, covering the last six years, gives a comparison of (1) the total exports of eggs from Canada according to the Dominion trade returns, (2) the imports from Canada into the United States according to the American returns, and (3) the total imports from all countries into the United States, for each fiscal year ending June 30 :

Year.	Total exports from Canada.		Imports from Canada into United States.		Total imports into United States.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	Dozen.		Dozen.		Dozen.	
1880	6,452,580	$740,665	7,662,068	$894,349	7,773,492	$901,932
1881	9,090,135	1,103,812	9,471,391	1,199,157	9,578,076	1,206,067
1882	10,499,082	1,643,709	11,728,518	1,793,167	11,929,355	1,808,585
1883	13,451,410	2,256,586	14,683,061	2,584,279	15,279,065	2,677,604
1884	11,490,855	1,960,197	14,688,338	2,356,313	16,487,204	2,677,360
1885	11,542,703	1,830,632	13,969,474	2,095,437	16,098,450	2,476,672
Totals	62,526,765	9,539,901	72,202,850	20,922,702	77,145,642	11,748,220

It will be observed that the United States buy nearly all of their imported eggs from Canada. On the other hand, the great bulk of our egg exports are sent to that country. The American returns, indeed, show larger imports from Canada than our total exports, according to our own returns, and the former are no doubt the more accurate, for this reason : although eggs go into the United States free of duty, all imports of them are entered at the custom houses, while many exports are doubtless made from Canada without being entered here, owing to the less rigorous watchfulness of exports than of imports. The following figures for the last three years, from our Trade tables, will show

that of the total quantity of eggs exported to the United States from Canada, about 70 per cent. go from Ontario :

Year.	Total exports to U.S.		Exports to U.S. from Ontario.	
	Quantity.	Value.	Quantity.	Value.
	doz.	$	doz.	$
1883	13,413,744	2,251,304	8,939,250	1,612,043
1884	11,384,856	1,950,561	7,800,317	1,335,688
1885	11,512,279	1,726,729	7,953,065	1,234,714

In the United States tables the imports from Ontario and Quebec are not given separately, but it is fair to assume that those from Ontario are at least in the same relative proportion as our own tables show.

Although Great Britain imports annually an immense quantity of eggs, they do not show so great a volume of increase as its imports of some other agricultural commodities. In the ten years from 1875 to 1884 they increased from 61,768,630 dozen to 82,800,730 dozen, not a very remarkable advance, relatively speaking, in that length of time.

Dealers evidently find the exportation of eggs much more profitable than that of poultry, for the latter in value amounts to less than one-tenth of the former. The returns for the whole Dominion of the exports of "poultry and other animals," (excluding horses, cattle, swine, and sheep) for the last ten years, are as follows :

1876	1877	1878	1879	1880	1881	1882	1883	1884	1885
$74,317	$48,303	$67,448	$90,880	$141,034	$133,963	$149,804	$161,229	$192,908	$175,475

During the ten years from 1875 to 1884 the total imports of poultry and game into Great Britain and Ireland increased from $1,596,590 in the former year to $3,263,854 in the latter. The following table, giving the total imports of horned cattle and sheep into the United Kingdom for the same ten years will indicate the growth of the market there for imported live stock during that period :

Year.	Cattle.		Sheep.	
	Number.	Value.	Number.	Value.
1875	263,684	£4,885,462	985,652	£2,185,750
1876	271,576	4,860,440	1,041,329	2,226,952
1877	201,193	3,817,499	874,055	2,107,466
1878	253,462	5,080,702	892,125	2,171,904
1879	247,768	4,639,431	944,888	2,252,824
1880	389,724	7,793,960	941,121	2,266,436
1881	319,374	6,251,577	935,144	2,191,762
1882	343,699	6,655,590	1,124,391	2,558,827
1883	474,750	9,332,242	1,116,115	2,518,382
1884	425,507	8,271,020	945,042	2,149,704

While the trade in sheep has barely held its own, the mother country's imports of cattle have increased over 61 per cent. in the ten years. The following figures will show

what proportion of our total exports of these animals went to Great Britain and Ireland in 1883 and 1884:

	Cattle.		Sheep.	
	1883.	1884.	1883.	1884.
Canada exported	66,396	89,263	308,474	304,403
Great Britain and Ireland imported from Canada	53,176	61,083	94,285	61,367

The great national importance of the export trade which has been brought under review in the tables and other statements given here will be apparent from the following comparisons of the relations towards each other of (1) the total aggregate exports of all kinds, (2) the aggregate exports of animals and their produce, and (3) the aggregate exports of agricultural products for the two five-year periods, from 1876 to 1880, and from 1881 to 1885, respectively:

	1876-80		1881-85
Total aggregate exports of Dominion	$331,652,632	.....	$408,630,496
Exports of animals and their produce	83,563,224	.....	110,446,436
Exports of agricultural products	95,760,587	.....	102,039,894

In the first five years the exports of agricultural products exceeded those of animals and their produce by $12,197,363, whereas in the second period the latter exceeded the former by $8,406,542. Of the total exports, animals and their produce formed 25 per cent. in the first five years and 27 per cent. in the second, and agricultural products 29 per cent. in the first and 25 per cent. in the second period.

IMPORTS OF THOROUGHBRED STOCK.

The report of the Department of Agriculture at Ottawa shows that during the year ending December 31, 1885, the imports of thorough-bred animals by Ontario farmers were as follows:

Cattle.—At Quebec—109 Shorthorns, 15 Jerseys, 15 Herefords, 3 Galloways, 8 Sussex, 4 Holsteins, 30 Ayrshires—184. At Sarnia—3 Shorthorns, 71 Holsteins, 59 Jerseys, 2 Herefords,—135. Total cattle, 319. In 1884 the total number imported was 281, of which 201 were quarrantined at Quebec and 80 at Sarnia.

Sheep.—At Quebec—18 Cotswolds, 89 Southdowns, 1 Hampshire, 29 Dorsets, 38 Shropshires. Total sheep, 175. The total number imported in 1884 was 272.

Swine.—At Quebec—2 Suffolk, 2 Essex, 28 Berkshire—32. At Sarnia.—11 White Chesters, 8 Poland Chinas, 14 Red Jerseys, 19 Yorkshires, 17 Berkshires—69. Total swine, 101.

FROM THE MAY REPORT.

George Leak, Rochester, Essex: I think there is a greater supply of cattle than usual, which perhaps accounts for their poor condition. There was a plentiful supply of fodder throughout the winter.

N. A Coste, Malden, Essex: The winter has been very severe for this part of the country—the most severe so far as known by any of the farmers of any winter on record. The cattle had to be fed much longer than usual, and sufficient fodder existed for all the requirements up to the end of April, but at present it is getting scarce. Grass, however, is at last coming up. Cattle are generally in fair condition, and no sickness prevails.

Jasper Golden, Gosfield, Essex: Store pigs look well, and there is a good supply of food. I never knew of a winter when so many sows lost their young; hogs will not be so plentiful as was expected.

A. M. Wigle & Son, Gosfield, Essex: Plenty of corn from last fall kept the live stock well.

Edward Nash, Mersea, Essex: There has been a great loss of young pigs; many farmers lost both sows and pigs.

C. Darling, Howard, Kent: Fodder has been fairly plentiful and live stock looks well, with some few exceptions.

Thomas Bateman, Chatham, Kent: Live stock as a rule look better than after the long winter, especially cattle. Pigs are rather scarce, a few having died about a month ago from hog cholera.

Dugald Campbell, Dunwich, Elgin: Live stock look very well. Pigs are in good order, but around here a majority of sows pigged about the 17th of March, and the weather being excessively cold, the pigs were nearly all lost. Fodder has been abundant throughout the winter, but owing to the long cold winter and late spring it is getting pretty well cleaned out.

D. M. McCallum, Dunwich, Elgin: Cattle and horses are looking very well; sheep are very poor, the winter being so close and dry. There was plenty of feed and of a good quality, hay especially.

James Davidson, Yarmouth, Elgin: Horses are fairly well now, but a great many have been affected with a kind of diphtheria or distemper; a number of bad cases, but not many deaths. Hogs are scarce, a great many having lost their spring litters.

George Cruise, Walsingham, Norfolk: The condition of live stock is good. The long, cold winter has pretty well exhausted the fodder supply, and as a consequence the animals in general are a little thin. Fodder was somewhet scarce, but there was always some to be obtained in our township.

John H. Best, Walpole, Haldimand: Very good generally. Horses have had a distemper, which in many cases proved fatal. A number of lambs and young pigs have died, owing to the cold season.

J. H. Houser, Canborough, Haldimand: A few young cattle have died of blackleg.

S. H. Van Every, Pelham, Welland: Live stock are generally in good condition; a great many young pigs have died during the cold weather this spring.

Alex. Reid, Crowland, Welland: All in good condition. Plenty of fodder, and hay and oats have been very low in price all winter.

John Grant, Sombra, Lambton: Cattle are in very good condition in this neighbourhood; quite a number have died of actual starvation. Wasteful feeding in the early part of the season made fodder scarce in the spring.

Joseph H. Patterson, Dawn, Lambton: Horses are in good condition, but cattle are thin in flesh. The young pigs that were littered early have mostly perished from cold.

James Lovell, Brooke, Lambton: Live stock that have had proper attention are in good conditon; those that have wintered at the straw stack are very poor.

J. R. Smith, Plymouth, Lambton: Cattle are in average condition; horses have suffered from distemper and some have died; fodder very scarce.

G. E. Cresswell, Tuckersmith, Huron: Live stock are in fair condition. Great loss of lambs occurred owing to the cold spring. Sheep have suffered from a peculiar disease not understood by veterinary surgeons. The animal holds its head around to one side, falls off in condition rapidly, and dies in a short time in the majority of cases. I fancy it is an affection of the brain.

John Rudd, Goderich, Huron: Horses in good condition except where there are a few cases of pinkeye: cattle are healthy, but rather poor; sufficient fodder, with oconomy in feeding.

Malcolm McDonald, West Wawanosh, Huron: Stock are healthy, but low in flesh. A large quantity of pressed hay was brought in by rail, which sold at $15 to $20 per ton.

Peter Corrigan, Kinloss, Bruce: Stock of all kinds are in poor condition on account of the great scarcity of feed. A large quantity of hay was imported and sold from $18 to $20 per ton.

William Welsh, Huron, Bruce: The necessity of warmer stabling ought to be sufficiently impressed on all, after the very severe winter we have had: the greater comfort and saving of feed would soon pay for the extra expense.

Donald Blue, Huron, Bruce: Stock wintered in fair condition, notwithstanding the long severe winter. A number of lambs were lost, more through carelessness than from any disease among the sheep.

Hugh Murray, Bruce, Bruce: Live stock generally had a hard winter: the continued severe weather caused a scarcity of feed. Horses are generally in good condition, but cattle are very thin, as also are sheep and pigs. Fodder was very scarce towards the end of March and through April.

John Douglass, Arran, Bruce: Stock of all kinds are very poor; fodder having been exceptionally scarce, great quantities of hay were imported at high prices.

Joseph McArdle, Proton, Grey: This township is best adapted for stock-raising, as grass, clover and all coarse grains grow well here, also roots. Our farmers are not particular enough about improving the stock. If some—and we have those that can afford it—would pay more attention to their stock and get some good thoroughbred bulls here, it would pay well.

William Irvine, Bentinck, Grey: Live stock in general are leaner this spring than for many years back. Fodder has not been so scarce for years as this winter, a large quantity of pressed hay being bought for cattle.

A. Elliott, Artemesia, Grey: The general condition of all kinds of live stock is good. There was a sufficiency of fodder to meet all demands; of course there were individual cases of scarcity, but there was a sufficiency on the market.

Joseph K. Irving, Sydenham, Grey: I believe it would be much more profitable if farmers kept one-third less cattle, in numbers, and if they fed the less number what they feed the large, they would have better returns than they now have.

J. R. Irving, Innisfil, Simcoe: Stock are generally good, but there has been some distemper among horses, with a few deaths. Fodder has not been so scarce for some years, but still there has been enough in this part.

George McLean, Oro, Simcoe: The condition of stock is not very good. The severe winter, together with a great scarcity of fodder towards spring, has caused considerable loss among sheep and lambs.

Archibald Thomson, Orillia, Simcoe: Live stock are poor, cattle being the worst. Very many farmers were scarce of fodder, hay being $20 per ton all spring.

John Hutton, Metcalfe, Middlesex: Horses look well, but cattle and sheep, as a rule, are not in good condition; hogs are scarce. Fodder is scarce and all is used up.

John Dawson, Williams West, Middlesex: Stock look very fair. Distemper has been quite bad and some few horses have died of it.

S. C. Tuttle, Oxford East, Oxford: Stock are fair—quite as well as can be expected considering the severe winter; a number of farmers have lost their young pigs.

Thomas A. Good, Brantford, Brant: Stock are in fair condition. There has been a great deal of distemper among horses this winter and spring, and numbers have died from it. Fodder was plentiful during the winter, but it is now scarce on account of the late spring.

James Slimmon, Maryborough, Wellington: A bad cough prevailing with horses; cattle a little thin; sheep not doing well and many lambs dying, but I do not know from what cause.

J. McDonald, Garafraxa W., Wellington: Stock are generally thin. Horses have been troubled with a disease in the nature of colic, accompanied by a severe cough; it has proved fatal in some cases. Hay was very sarce and dear.

John McNab, Luther West, Wellington: Cattle are in poor condition. Numbers of mares are losing their foals, and in many instances have died themselves. Fodder is very scarce.

R. Rennelson, Dumfries N., Waterloo: The condition of live stock generally good, notwithstanding considerable disease among lambs, and rather heavy loss of ewes in lambing. This disease is, I suppose, called goitre. We see less or more of it every season on some farms, while on others it is unknown; and now and again it makes its appearance on a farm, where they have long been healthy. No ascertained system of treatment seems to be proof against the trouble.

Wm. Dynes, Mono, Dufferin: Cattle are very poor, but horses are fair. Some sheep died from grub in the nose. Fodder is very scarce.

Robert Gray, Mulmur, Dufferin: Live stock are generally in good condition; about one-third of the lambs died.

Isaac A. Merritt, Grimsby, Lincoln: The condition of stock may be considered fair; some horse distemper has prevailed. No disease among pigs to my knowledge, that is among grown hogs, but a great many sows have lost their pigs in early spring. Some think it is a disease, but I am of the opinion that it was caused by confining sows too closely and having them too fat. There has been generally a sufficiency of fodder.

W. M. Calder, Glanford, Wentworth: Stock are in ordinary condition, but considerable distemper appeared among horses in this neighbourhood during the winter, some having a severe attack. There has been considerable fatality among young pigs, a great many being dead at birth; cannot account for it. The fodder supply has been sufficient, indeed abundant.

R. Postans, Trafalgar, Halton: Stock of all kinds are in good health. There was an unusual abundance of fodder to begin the winter with, and hay could scarcely be sold; but owing to the long, steady winter, feed has become very scarce and consequently high priced.

John Campbell, Chinguacousy, Peel: Stock has been well wintered and looks well; no disease of any kind except in hogs, and young pigs have done very badly. Hay has been plentiful, never having got over $12 a ton in our markets.

Archibald McKinnon, Caledon, Peel: Cattle are in good condition; sheep are doing very well; pigs have not been successful; two-thirds of the sows lost their pigs in March.

J. Bartholomew, Whitchurch, York: This has been a hard winter on stock by the long continued cold weather, but I have not heard of any disease. In general feed has been plentiful.

L. Weller, Scott, Ontario: Stock are in a healty condition, but thin in flesh. Cattle are generally stabled yet, 15th May. There has been a sufficiency of fodder.

John Foott, Hope, Durham: The condition of live stock is rather low, especially cattle; considerable losses in young pigs. There was a plentiful supply of fodder and large quantities of old hay, but owing to the length and severity of the winter it is becoming scarce.

John A. Sprague, Sophiasburg, Prince Edward: The condition of live stock is poor, particularly cattle. There has been a great scarcity of fodder.

John Sharp, Ernesttown, Lennox: Stock generally wintered well, but owing to a scarcity of fodder towards spring, they have fallen off to some extent. Hay went up from $7 in winter to $15 in spring.

Thos. Lane, Denbigh, etc., Lennox and Addington: The condition of live stock is not very good. Cattle suffered from a spinal affection towards the end of winter, and partially lost the use of their limbs; cause, excessive cold. Fodder is scarce, hay selling at $20 to $25 per ton.

John Elkington, Palmerston, Frontenac: Cattle of all kinds are very poor. Hay was scarce at $20 per ton, and straw was short also. Many settlers were chopping down maple trees to browse their stock as early as March 1st. I must here express an opinion that no food appears to bring cattle through so strong and hearty as maple browse.

Wm. A. Webster, Lansdowne, Leeds : With good stock men, live stock is all right; but alas ! we have too many ill-bred and worse fed cattle, which is the fault of the men and not of the stock. No disease. Plenty of fodder in this township.

Alex. Buchanan, South Gower, Grenville : Live stock are in good condition, but there have been a few cases of horse distemper. A large number of lambs this spring.

James P. Fox, Winchester, Dundas : The condition of live stock is generally good. A great many young pigs died when from one to four weeks old. There have been a few cases of blackleg among the cattle. Plenty of fodder.

Kenneth McLennan, Lochiel, Glengarry : Live stock is in very good condition. Distemper very prevalent among horses, and some have died. Enough of fodder in this locality.

John McLennan, Clarence, Russell : Cattle are generally thin ; horses are in good condition ; most of the young pigs are dying. Fodder was plentiful till late in the spring, but it is scarce now.

James Rutherford, Osgoode, Carleton : The condition of live stock is generally good. This is a remarkable season for twin lambs. There has been a great scarcity of fodder, except with those who had some left over from the previous year.

Isaac Wilson, March, Carleton : Farmers in this vicinity are improving very fast. A great deal of imported stock is being brought in.

Peter Dalglish, Admaston, Renfrew : Live stock are poor. Fodder very scarce, and hay went up to $20 per ton.

Wm. Brownlee, Dalhousie, Lanark : Cattle are thin ; horses in good condition ; young pigs scarce, and a great many dying. Fodder very scarce.

Geo. Green, Ramsay, Lanark : The condition of live stock is only fair. There has been an unusual number of lambs this spring, but many have perished from cold. Fodder is fairly plentiful.

William Ramsay, Mariposa, Victoria : Horses have come through all right, but cattle and sheep are generally very thin, owing to the scarcity of feed this spring. Pigs are in very good condition.

A. Howkins, Eldon, Victoria : I have been farming quite a number of years, but in all my recollection never was there such a scarcity of feed. Some farmers took their cattle to the woods and cut down trees for them to eat the buds. From $3 to $5 could be got for a load of straw and $16 and $17 for a ton of hay.

William Armstrong, Otonabee, Peterborough : Live stock of all kinds are looking well. We had an abundance of hay in this township last season, and our cattle have come through in fine condition. There will be a surplus of hay for another season.

William Anderson, Belmont, Peterborough : Cattle are very thin and weak on account of scarcity of fodder ; hay sold for $20 per ton.

George W. Deller, Cardiff, Haliburton : Horses have not suffered as much as other stock ; cattle have literally starved, a large number having died of sheer want of food, and of those living a large majority are in a frightful condition which nothing can, at least this summer, rectify. There has been such a scarcity of fodder that whole herds have been kept alive on the tops of trees chopped down for the purpose.

James McGregor, Wollaston, Hastings : Live stock are in a very poor condition. The winter until January being unusually open many fed liberally, indeed, wasted it, and hay was sold to lumbermen at $15 per ton, but towards spring the same parties bought at $20 and many sold cattle to save buying fodder. Some cattle died of starvation.

James D. Smith, McLean and Ridout, Muskoka : Cattle are in a very poor condition ; some have died. There has been a great mortality among calves, caused in some instances by bloat and in others through the intense cold and bad condition of the majority of stables. There has also been great mortality among sheep, many dying of grub in the head. Fodder has been very scarce ; it reached the enormous price of $30 a ton.

John Young, Armour, Parry Sound : Live stock generally are very poor, especially cattle. Owing to the construction of the N. and P. Junction Railway, hay is very scarce, being worth $30 per ton, and very little to get.

FROM THE AUGUST REPORT.

J. H. Morgan, Anderson, Essex : Hog cholera has been playing the mischief. Some farmers lost their whole stock.

D. McCall, Southwold, Elgin : Pastures have been good until about two weeks ago. Since then they have been very dry, and the grasshoppers have about destroyed everything green, except the corn.

Samuel MacColl, Dunwich, Elgin : Fat stock are kept up to a better than usual condition at this season of the year, they being shifted to the fresh second growth pastures which are yet ample. Not much attention given to dairy produce at present, as the market for it will not pay its manufacture.

Geo. Cruise, Walsingham, Norfolk : Never in my life have I seen pasture fields looking so brown. You would think the grass completely dead in some places, and as a consequence the live stock have a hungry look. They are healthy, though. Not many fat animals.

B. B. Smart, Sarnia, Lambton : Pasture is good, and good pasture makes fat horses, sheep and cattle. A good many have quit keeping sheep, or keep only a few. There does not seem to be much money made raising wool at 17 to 22 cents per pound. Farmers are going more into raising cattle for export.

G. E. Cresswell, Tuckersmith, Huron : Large quantities of grass fed cattle and sheep sent to England and other markets. Prices have been fair, but not equal to last year by half a cent.

B. P. Mitchell, Howick, Huron: There having been frequent rains this summer, the pastures have been very good. Stock are not so good as they might be; the hard winter told severely on them. Horses, by their general appearance, fared better than cattle. Fat stock few.

John Douglass, Arran, Bruce: Pastures at present poor on account of drought and want of more sowing of mixed grasses.

Thos. Lloyd Jones, Burford, Brant: Sheep good, but numbers decreasing owing to the very low price of wool.

Henry Key, Oakland, Brant: Live stock are doing well. Farmers are taking more interest in stock than formerly and take better care of them, and as a consequence the live stock of the township are improving year by year.

James Graham, Scugog, Ontario: The grasshoppers are so plentiful that they have destroyed all the old pastures.

John Riddell, South Monaghan, Northumberland: Seventy-five per cent. of the old clover having been killed last spring the pastures were left thin, and the late drought has made them poor for the season of the year. Live stock generally have suffered thereby to some extent.

Franklin Jones, Hillier, Prince Edward: Pastures never so good within my recollection. There has been no lack of rain since vegetation commenced, and rather too much for low land. Stock of all descriptions in good condition, and increased in number as compared with last year. As to prices: horses, high; milch cows, medium; two and three year olds, fair; sheep, low. Fat grazing stock for sale not abundant, but increasing yearly. Present price for three year olds, $23 to $25.

Robert Anglin, Pittsburg, Frontenac: There will be an increased amount of beef cattle on account of good grass and the low price of cheese and butter. Many farmers will reduce their cow stock; all old and poor ones will be weeded out, which in the end will be an improvement.

Alex. Buchanan, South Gower, Grenville: Not many fat stock, but a great quantity of store stock that are in very good butcher's condition, owing to the excellence of the pastures. More beef cattle raising than for many years.

John J. Watson, Brudenell, Renfrew: In some places the grasshoppers have completely destroyed the pastures. They are as thick as hail on the ground after a storm, and devour everything—leaves, flowers, grain and vegetable tops.

John H. Delamere, Minden, Haliburton: Pastures have been excellent up to the latter part of July, when they became somewhat dried up, but they are looking better now. Horses, cattle and sheep are generally in first-class condition. Pigs somewhat scarce here this year. There will be quite a large number of young cattle fit for beef (grass fed) to dispose of here. No stall feeding done. No cheese being made here now, but butter is plentiful and good, as up to the end of July pastures (which were very late starting) have been particularly good, having had tolerably showery weather in May and June.

FROM THE NOVEMBER REPORT.

J. H. Morgan, Anderdon, Essex: The competition of foreign wool is killing our wool growing industry. The Michigan farmer gets 10 cents per lb. more for his wool than we do.

A. M. Wigle & Son, Gosfield, Essex: There is a great surplus of general purpose horses. Cattle and sheep are picked up as fast as they are ready for market. Hogs in some parts of the country died off immensely, but this township was spared. There are many very fine hogs in Gosfield.

J. G. Stewart, Raleigh, Kent: More enterprise is shown yearly in the quality of stock. There is plenty of corn and a big supply of hogs, but prices are likely to be low.

Edmund B. Harrison, Howard, Kent: The young and thrifty cattle have been picked up by Americans and shipped west.

James Davidson, Yarmouth, Elgin: Sheep are not so plentiful as usual; wool is too low in price.

James Morrison, Walsingham, Norfolk: Cattle are very low, and there is no sale for them. Hogs have been mostly bought up live weight and shipped off.

J. A. Ramsden, Humberstone, Welland: We have a good many fat cattle and any quantity of sheep, with a very poor market for both. Hogs are healthy and in good supply, and cheap. There is any amount of stuff for market, but no market.

J. W. Overholt, Wainfleet, Welland: Our cattle look fine, as we have had a fine summer for pasture. I find that stock pays better than raising grain. Markets are very dull and low.

James Watson, Moore, Lambton: Many farmers are turning their attention to stock raising and fattening cattle. Prices are not high, but compare favourably with the prices realized for other farm produce. There is no disease of any kind that I have heard of amongst any animals in Moore.

John Grant, Sombra, Lambton: The pastures have been extra good all the season, and all stock are in a very thriving condition.

A. Drummond, Howick, Huron: A great many young cattle that ought to have been fed here have been bought up and shipped away.

John McMillan, Hullett, Huron: The tendency at present in this locality is to raise beef for the English market, and in order to be successful none but pure-bred male animals should be used. Both breeders and feeders, as well as those who buy and ship, lose money on rough animals, as even in dull times a first-class compost animal always commands a good price in the old country markets when rough animals can hardly be sold at any price.

John Anderson, East Wawanosh, Huron: Cattle did not seem to put on flesh this summer, although there was lots of grass; but it was so wet that there was not so much nutriment in it to put on flesh as there is in a middling dry season.

Thomas Askin, Amabel, Bruce: There is not much beef made here; but the farmers are turning their minds more to stock than they were.

Daniel McNaughton, Bruce, Bruce: Live stock are in good condition, and will have at least one month's advantage in the stall over last year. I notice a very great improvement in both quantity and quality of live stock exhibits at our township shows this fall, more especially in cattle and horses of the Durham and heavy draught classes. It is certainly a noticeable fact that *scrubs must go.*

James Weatherhead, Lindsay, Bruce: There should be a law to fine any farmer who lets a scrub bull run at large.

John Booth, Normandy, Grey: Scrub cattle and scrub bulls in particular are still the plague of the settlement.

Wm. H. Free, St. Vincent, Grey: There has been a great improvement within the last two years in the young horse stock of this section. The introduction of first-class stallions is beginning to tell greatly. The companies formed—viz., the Sydenham and St. Vincent Stock Importing Co., and the Meaford Importing Co.—have been a great benefit, and this idea is well worthy the consideration of other sections.

W. Totten, Keppel, Grey: Fall pastures are really good, owing to copious rains and warm weather, and consequently live stock are in extra good condition.

W. S. Porter, Keppel, Grey: At the fair on the 15th of this month cows that two years ago sold for $45 were sold for $24.

Alex. Stephen, Sullivan, Grey: The fattening of cattle is not up to that of former years at this period. Sheep and hogs are in better condition. The supply at present seems to be greater than the demand, and prices are considerably lower than they have been in former years.

Joseph M. Rogers, Sydenham, Grey: The prospect of supplies for market is a great deal better than the prospect of a market for the supplies.

W. W. Revington, Biddulph, Middlesex: Pastures are good and stock in very fair condition, but cheaper than for some years. A good stocker can be bought for three and a half cents per lb. Considerable stock is likely to be held over till next year.

R. W. Giffin, West Nissouri, Middlesex: Most of the heavy stock that is fit for shipping has been bought up. The lighter stock will be kept over for early beef next spring. Sheep are not paying, and farmers are going out of them.

S. C. Smith, East Oxford, Oxford: Very little interest has been taken in sheep for the last two or three years by the farmers of this township.

Thomas Lloyd Jones, Burford, Brant: Flocks of sheep are greatly diminshed owing to the low price of wool.

Thomas Dunn, Oakland, Brant: The supply of hogs for market will probably be small owing to the presence of the so-called hog cholera in some sections.

F. R. Hamilton, Hibbert, Perth: There will be considerable stall-feeding done. A great many are going out of sheep altogether.

W. D. Wood, Eramosa, Wellington: Fattening of stock will be less gone into on account of scarcity of roots.

Alex. Butchart, West Luther, Wellington: There is plenty of fodder for stock this winter. If people in this part would get good houses for their stock, it would pay them double over.

R. Rennelson, North Dumfries, Waterloo: There has been in some instances much loss of sheep. I have lost eleven this summer out of fifty-five, chiefly by derangement of the digestive organs, sometimes induced by continued drenching rains. Long-woolled sheep are at a great discount in the country at present. The Southdown, with his compact form and unrivalled quality, is thought small for crossing; hence a demand for the larger Downs; amongst these I think the Hampshire entitled to the first place because of his great bone, early maturity, and nearest approach to the Southdown in quality.

Thomas Shaw, Binbrook, Wentworth: Sheep are just about holding their own. More short wools are coming in.

E. D. Smith, Saltfleet, Wentworth: Farmers in this fruit section should carry more stock; fruit growing and stock raising go hand in hand. Fruit requires much labour and much manure. Keeping an extra heavy stock, even at a small direct profit, enables us to get a large quantity of good manure, and gives employment to part, at least, of the summer hands for the year. There are very few flocks of sheep. Ten years ago there were ten flocks to one now.

R. Postans, Trafalgar, Halton: I do not think as many beef cattle are fed in this locality as there were a few years ago.

J. D. Evans, Etobicoke, York: Sheep are scarce; fewer of them are kept each year.

J. Bartholomew, Whitchurch, York: Cattle are not looking as well as might be expected in some places, for the condition of pastures. I think on account of so much rain the grass has been soft and lacking in substance.

Philip McRae, Mars, Ontario: I do not think farmers will go into fattening stock very extensively this fall, on account of the lowness of prices.

James Parr, Cartwright, Durham: Prices are so low that people feel discouraged and are not putting their cattle up.

C. A. Mallory, Percy, Northumberland: Sheep are becoming scarce. Farmers find that cattle pay better than sheep, with the low price for wool.

Louis P. Hubbs, Hillier, Prince Edward: There has been a vast improvement both in the stock and in the way of keeping them. All kinds look well.

A. Knight, Kingston, Frontenac: There is a heavy supply. Prices rule low.

G. F. Deane, Lansdowne, Leeds: Stock are thin, owing to excessive moisture and cool weather.

John B. Wilson, Lansdowne, Leeds: Fall pasture has been fairly good, but not the best, as the weather has been too cold for good growth. Live stock of all kinds seem to be in fair condition. Hogs are being well fatted owing to the low price of grain.

S. Chalmers, Wolford, Grenville: Cattle sold well, and a good many have been sold.

A. M. Campbell, Kenyon, Glengarry: Large quantities of sheep and lambs were sold for the Boston market.

Kenneth McLennan, Lochiel, Glengarry: There are plenty of cattle and hogs for sale, but the demand is not good.

Wm. Ferguson, West Hawkesbury, Prescott; Pastures were never known to be so bad as they have been this season all through.

R. Serson, Fitzroy, Carleton: From what I saw at the fall fairs, cattle are in poor condition, and very poor prices were realized.

W. H. Berry, March, Carleton: Pastures are not very good, the weather on the whole having been cold and dry. Stock are in fair condition.

A. Schultz, Sebastopol, Renfrew: The supplies are here all right, but we don't see the market.

F. Train, Somerville, Victoria: This part of the country is more adapted for raising stock—sheep and cattle—than for grain, as it cannot be beat for oats, hay and roots; and a great number of the farmers are turning their attention to stock raising and importing good Durham and Polled Angus males and good breeds of sheep. Cattle this year are very cheap and farmers are letting them all go, being afraid of running short of feed, as they did last year; but I believe it will be better to have them cleaned out, as they are of an inferior breed, and better stock, if fewer of them, will take their place.

John Fell, sr., Somerville, Victoria: Live stock are not in as good a condition as usual. They were very thin in the spring, and this retarded their improvement.

Hamilton Spence, Dummer, Peterborough: Pastures are very short and cattle are very thin, but sheep are in good condition; pigs are fair, but very few are raised for market.

William Armstrong, Otonabee, Peterborough: There is not much preparation for stall-feeding, as the prospects of remunerative prices are very gloomy. Farmers are selling their hogs off the stubble for what they will bring.

James Tindle, Smith, Peterborough: There is plenty of stock of all kinds, but I think many animals will be slaughtered in a half-fed condition, as there is no expectation of paying prices.

A. Southworth, Cardiff, Haliburton: Pastures are very bare, having been eaten by grasshoppers.

Stephen Kettle, Glamorgan, Haliburton: There has been but light growth in the pastures owing to frost.

Donald Grant, Monck, Muskoka: There is a good supply of all sorts of live stock, but hardly any market. It is hard to sell anything this fall.

CHEESE.

The results of the past year's operations in cheese making have been rather unsatisfactory. Of late years the profitableness of this industry has stimulated a largely increasing production. Factories have been springing up in all parts of the country, and, by affording farmers an easy and remunerative means of disposing of their milk, have tended to displace the old system of home dairying. This expansion, promoted as it has been during the past year by generally good pasturage, and accompanied by a weakened demand both at home and abroad, has resulted in a considerable drop in prices, so that at the close of the season there were large stocks of cheese in the country waiting for a market. The prevailing feeling among dairymen, however, is that this inactivity is only temporary, and that the Canadian cheese industry, which has attained such enormous proportions, must soon revive with a return of an active foreign demand: therefore there is no diminution in the number of factories in operation. The following table shows the

total number of factories in the Province, and estimated quantities of milk used, quantities and values of the product, etc., for 1883, 1884 and 1885, together with the various averages for the three years :

——	1885.	1884.	1883.	Averages. 1883-5.
No. of factories in operation	752	751	635	713
Pounds of milk used	733,437,254	685,964,727	539,696,197	653,032,726
Pounds of cheese made	71,209,719	66,939,573	53,513,032	63,887,441
Value of cheese ..... $	5,781,469	6,998,889	5,589,339	6,123,232
Value of cheese per lb. ..... cts	8.119	10.456	10.445	9.584
Pounds of milk to make 1 lb. of cheese	10.300	10.248	10.085	10.222
Value of product of 100 lbs. of milk ..... cts	78.83	102.03	103.56	93.77
Average per factory of milk used ..... lbs	975,315	913,402	849,915	916,323
Do. of cheese made ..... lbs	94,694	89,134	84,272	89,646
Do. of value of cheese	7,688	9,319	8,802	8,592

These comparisons afford a very clear and striking view of the great fall in values that has occurred. The average price per pound obtained last year was but a trifle over eight cents, a much lower rate than has ruled in any of the years for which the Bureau has received returns. While the number of factories in operation in 1885 was practically the same as in 1884, their production amounted to over 4¼ million pounds more, and yet the aggregate value of the greater product was upwards of $1,200,000 less than that of the smaller product of the preceding year.

The following statements are compiled from direct returns made to the Bureau by the factories themselves :

——	1885.	1884.	1883.	Averages 1883-5.
No. of factories reported	433	445	385	421
Quantity of milk used ..... lbs.	436,335,359	426,260,665	327,353,679	396,649,901
Quantity of cheese made ..... lbs.	42,479,047	41,595,027	32,495,811	38,889,962
Total value of cheese ..... $	3,446,514	4,357,208	3,396,882	3,733,535
No. of patrons	26,300	24,015	19,797	23,371
Average No. of patrons per factory	61	54	51	56
Average No. of cows whose milk was supplied	154,824	158,366	117,577	143,589
Average No. of cows per factory	358	356	305	341
Average yield of milk per cow ..... lbs.	2,818	2,692	2,784	2,762
Average produce of cheese per cow ..... lbs.	274.4	262.7	276.4	270.8
Average value of product per cow ..... $	22.26	27.51	28.89	26.00
Average return for each patron ..... $	131.05	181.44	171.59	159.75
Average No. of working days	157	159	156	157

It is to be regretted that, as these returns are not compulsory, more than a third of the total number of factories neglect to send them, and the number sent last year was a little under that of the year before. Incomplete as they are, however, they no doubt represent pretty accurately the general condition of the cheese industry, and form reliable data from which to compute the total product of the country, as in the first table, the

number of factories in operation being known. The increased number of patrons, notwithstanding the smaller number of factories reporting, indicates the degree to which the pursuit of dairying is extending among the farmers; yet, owing to the prevailing low prices, the average return of money to each patron was $50 less last year than the year before, and nearly $30 less than the average of the three past years. The effect of the fine pasturage of the year is seen in the yield of milk as well as the product of cheese per cow, both of which were above the average.

The following returns of the year's operations by counties, from the principal cheese-making districts of Eastern and Western Ontario respectively, form a basis for some interesting comparisons:

Western.	Days worked.	Cows.	Milk.	Yield of milk per cow per—		Cheese.	Value.
				Season.	Day.		
	No.	No.	lbs.	lbs.	lbs.	lbs.	$ c.
Elgin	166	3,714	11,874,815	3,197	19.3	1,134,770	93,968 72
Norfolk	167	5,407	15,942,620	2,949	17.6	1,540,896	124,393 25
Lambton	151	3,630	10,583,517	2,916	19.3	1,003,429	83,360 60
Huron	146	4,694	13,699,203	2,918	20.0	1,302,318	110,255 95
Bruce	131	4,377	11,543,989	2,637	20.1	1,109,904	92,292 92
Middlesex	169	10,598	33,291,611	3,141	18.6	3,148,972	263,771 74
Oxford	179	13,599	43,158,641	3,174	17.7	4,129,068	345,273 24
Perth	156	8,570	24,726,326	2,885	18.5	2,374,447	203,879 46
Wellington	144	3,960	11,376,906	2,873	20.0	1,091,497	89,396 76
Totals and averages	162	58,549	176,197,628	3,009	18.6	16,835,301	1,406,592 64
Eastern.							
Northumberland	157	5,621	16,669,025	2,965	18.9	1,624,013	127,086 72
Prince Edward	149	3,786	10,392,995	2,745	18.4	1,019,101	77,155 88
Lennox and Addington	155	4,790	13,383,217	2,794	18.1	1,314,391	102,902 47
Frontenac	152	5,064	14,218,755	2,808	18.5	1,376,574	108,859 79
Leeds and Grenville	168	19,139	53,090,181	2,774	16.5	5,293,667	418,721 47
Lanark	154	6,818	17,508,815	2,568	16.7	1,753,749	138,984 68
Peterborough	145	3,126	8,241,128	2,636	18.2	797,557	63,018 52
Hastings	164	12,970	37,315,305	2,877	17.5	3,731,803	292,634 11
Totals and averages	160	61,314	170,819,421	2,786	17.4	16,910,855	1,329,363 64

These figures are for factories which furnish complete data only. The following comparisons of averages, covering the past three years, relate to the same counties:

	Western counties.		Eastern counties.	
	1885.	1883-5.	1885.	1883-5.
No. of factories in operation	227	227	283	265
No. of working days	162	162	160	159
Averages per factory of—				
Milk used.....lbs.	1,276,794	1,208,134	970,565	917,970
Cheese made.....lbs.	121,995	115,872	96,084	91,909
Value of cheese.....$	10,193	11,473	7,553	8,569
No. of patrons	76	73	53	48
No. of cows	424.27	409.26	348.38	333.88
Yield of milk per cow—				
For the season.....lbs.	3,009	2,952	2,786	2,749
Per day.....lbs.	18.64	18.26	17.41	17.34
Product of cheese per cow—				
For the season.....lbs.	287.54	283.12	275.81	275.27
Per day.....lbs.	1.78	1.75	1.72	1.73
Value of product per cow—				
For the season.....$	24.02	28.03	21.68	25.67
Per day.....$. cts.	14.8792	17.3412	13.5479	16.1881
Lbs. of milk to make 1 lb. of cheese	10.4660	10.4265	10.1012	9.9878
Value of cheese per lb.....cts.	8.3550	9.9017	7.8610	9.3236
Value of product of 100 lbs of milk.....cts.	79.83	94.97	77.82	93.35

The western counties, with 2,765 fewer cows than the eastern, produced 5,378,207 lbs. more milk. Of this difference, however, over 2,000,000 lbs. are accounted for by the two working days enjoyed by the west above the number in the east. On the other hand, the cheese-producing quality of the eastern milk surpasses that of the western; for, though less in quantity, both per cow and in the total product, it yielded 75,554 lbs. more cheese; or, to make the comparison more definite, a pound of cheese was made from 10.1012 lbs. of milk in the east against 10.4660 lbs. in the west. This difference, however, between the two districts appears to be diminishing; in 1884 it was about one-twentieth of a pound less than in 1883, and in 1885 it was about one-tenth of a pound less than in 1884, the difference last year being only a little over one-third of a pound of milk. In connection with this part of the comparison it should be noted that in the product per cow, of cheese as well as of milk, the west somewhat surpasses the east. Thus, while the milk of the former district possesses a slight advantage as to quantity, that of the latter appears to have a corresponding advantage in cheese-making properties.

The difference in the price of cheese in the two districts more than deprived the east of the advantage of its larger product, which brought $77,229 less than the product of the west. There was, however, less discrepancy in value last year than the year before; while the average excess in the west per 100 lbs. in 1884 was 61½ cents, in 1885 it was but 49$_5$ cents. With this difference, the average product of an eastern cow for the season was worth $2.34 less to its owner than that of a western cow.

While the factories are considerably more numerous in the eastern counties than in the western—283 against 227—the individual factories in the latter district are evidently as a rule larger, judging from the averages of milk used and cheese produced, and the average number of patrons and cows to each factory.

Some interesting comparisons may be instituted between the different counties. In both 1884 and 1883 Oxford and Middlesex were the only counties in the Province in which the season's yield of milk per cow exceeded the standard of 3000 lbs.; last year Elgin not only joins them but surpasses them both, and that with a smaller number of working days. All three counties, however, enjoyed a season of milk supply considerably longer than the average, and that is what enabled them to make their high record. The counties of Wellington, Huron and Bruce exceed the most productive of them in the daily yield of milk per cow. With the same number of working days as Oxford, Wellington and Huron would each have given a return of 3,580 lbs. for the season, and Bruce 3,598 lbs., against Oxford's 3,174 lbs. In 1884 Huron gave the highest average daily yield of milk per cow, 20 lbs: in 1885 it remained at the same figure, but Bruce took the lead with 20.1 lbs. In the season's value of product per cow, Oxford stands first at $25.39, which, though $3.04 more than the provincial average for 1885, is $2.21 less than that of 1884, and $7.41 less than Oxford's own record in that year, when also it headed the list. Elgin came second last year at $25.30, and Middlesex third at $24.89. In eastern Ontario, Hastings came first at $22.56, Dundas second at $21.90, and Leeds and Grenville third at $21.88.

BUTTER.

Farmers were asked last year, as usual, to make reports to the Bureau of the total quantity of butter made by them in 1884; but as many do not keep very accurate record of their product and made no return, the statistics on this subject are necessarily defective. The total quantity given was 31,887,745 lbs., against 32,844,269 lbs., in 1883, both of which numbers are certainly far below the mark by probably one-third or more.

The number of creameries reported in operation was 27, being four more than in 1884, and the same number as in 1883. Of these, the number making returns was 13, against 8 in the previous year, and 12 in 1883. The following table gives the statistics in detail of the creameries reporting for 1885, and the totals for the two preceding years:

Counties.	Creameries.			No. of Patrons.	Butter.		Cheese.		Total value of produce.	Average price of butter per lb.
	No. in operation.	No. making butter.	No. making cheese.		Quantity made.	Value.	Quantity made.	Value.		
					lbs.	$ c.	lbs.	$ c.	$ c.	cts.
Lambton	1	1	....	75	25,951	4,825 34	.....	.....	4,825 34	18.60
Huron	4	2	....	160	67,197	12,921 71	.....	.....	12,921 71	19.23
Bruce	6	2	....	239	93,359	18,362 13	.....	.....	18,362 13	19.67
Perth	1	1	....	13	4,312	862 50	.....	.....	862 50	20.00
Wellington	1	1	....	200	63,337	12,285 79	.....	.....	12,285 79	19.40
Waterloo	2	1	1	49	19,542	3,896 91	72,238	4,441 24	8,338 15	19.94
York	1	1	....	37	6,975	1,315 24	.....	.....	1,315 24	18.86
Prince Edward	1	1	1	52	8,331	1,720 09	54,353	3,343 45	5,063 54	20.65
Dundas	3	2	....	86	61,343	12,793 69	.....	.....	12,793 69	20.86
Stormont	1	1	....	1	3,000	600 00	.....	.....	600 00	20.00
Other Counties	6	....	....	....	.....	.....	.....	.....	.....	.....
Totals for 1885	27	13	2	912	353,347	69,583 40	126,591	7,784 69	77,368 09	19.69
Totals for 1884	23	8	3	540	147,924	32,087 76	259,688	20,785 86	52,873 62	21.69
Totals for 1883	27	12	3	639	243,902	51,816 99	134,446	11,218 28	63,035 27	21.33

Of the 13 creameries reporting, only two made cheese as well as butter last year, against three in each of the two preceding years, the remaining 11 devoting themselves exclusively to the production of butter. This reduction was in the county of Prince Edward, where in 1884 there were two combination creameries against only one last year. It may probably be taken as an evidence of growth in the creamery system, that while for the creameries giving returns the average number of patrons was nearly the same, yet the average product shows an immense increase in 1885 over the preceding year. With an average of seventy patrons for each year, the average product per creamery was 27,180 lbs. of butter in 1885 against 18,500 in 1884, and the average value of the product was $5,352 in 1885 against $4,022 in 1884, although the price of butter ruled exactly two cents per lb. lower in the latter year than in the former. The counties of Huron and Bruce show the greatest development of the creamery system, both as to number of creameries and number of patrons. Outside of those counties, where the system appears to have obtained a firm foothold, those establishments have not yet gone beyond the experimental stage. The great bulk of the butter produced in Ontario is a home-made article of extremely varying quality. The large number of patrons reported from Wellington are those contributing to the creamery in operation at the Model Farm.

The following table gives a comparison of results for the past three years :

	Butter Making.			Butter and Cheese Making.		
	1885.	1884.	1883.	1885.	1884.	1883.
No. of creameries	8	5	5	2	3	3
Average number of patrons	671	335	281	101	205	95
Average No. of cows	3,490	1,591	1,140	606	1,000	803
Quantity of butter made..lbs	272,972	118,288	94,883	27,873	29,636	56,930
Quantity of cheese made..lbs	.....	.....	.....	126,591	259,688	134,446
Value of product .....$	54,010.59	25,717.21	19,618.88	13,401.69	27,156.41	23,608.99
Value of—						
Season's product, per cow, $	15.48	16.16	17.21	22.11	27.16	29.40
Daily product, per cow, cts	11.16	13.71	14.50	14.36	17.84	18.50
Average date of opening	May 14.	June 3.	May 21.	May 3.	May 14.	May 1.
Average date of closing	Oct. 25.	Oct. 20.	Oct. 9.	Oct. 26.	Oct. 26.	Nov. 1.
Average No. of days worked.	139	118	119	154	152	159

This statement seems to indicate the combination system to be more profitable than the single system of butter alone ; for under the former the value of last season's product per cow was $22.11 against $15.48 under the latter, a difference of $6.63, or a differencee in the value of the daily product of 3.2 cents per cow, and it was considerably more in the previous year. It is questionable whether the value of the milk for feeding purposes would be equal to this difference. However, the insufficiency of the data furnished in the above table, and the evident preference of butter-makers for the creamery system proper, render it unsafe to rely on this as a general deduction.

EXPORTS OF DAIRY PRODUCTS.

The exports of butter and cheese from Canada for the past ten years, by quantities and values, as shown by the Dominion Trade returns, together with the average ruling price of the same, have been as follows:

Year.	Cheese.			Butter.		
	Quantity.	Value.	Price per lb.	Quantity.	Value.	Price per lb.
	lbs.	$	cts.	lbs.	$	cts.
1876	35,024,090	3,751,268	11	12,250,066	2,540,894	21
1877	35,930,524	3,748,575	10	14,691,789	3,073,409	21
1878	38,054,294	3,997,521	11	13,006,626	2,382,237	18
1879	46,414,035	3,790,309	8	14,307,977	2,101,897	15
1880	40,368,678	3,893,366	10	18,535,362	3,058,069	16
1881	49,255,523	5,510,443	11	17,649,491	3,573,034	20
1882	50,807,049	5,500,868	11	15,161,839	2,936,156	19
1883	58,041,387	6,451,870	11	8,106,447	1,705,817	21
1884	69,755,423	7,251,989	10	8,075,537	1,612,481	20
1885	79,655,367	8,265,240	10	7,330,788	1,430,905	20

Our exports of cheese have from year to year steadily and enormously increased, having more than doubled during the period. This very gratifying fact is, of course, due to the excellent quality of Canadian cheese and the high reputation it has established for itself in European markets. On the other hand our butter exports, although showing an apparently healthy increase during the first half of the period, have declined rapidly during the latter half, until last year they were less than 60 per cent. of those of ten years ago, and less than 40 per cent. of those of 1880. This very serious decline cannot be due to any fall in price, for that has been well maintained, nor to any weakening of the foreign demand, for the British trade returns show a larger relative increase in the imports of butter into the United Kingdom during the period under review than of cheese, as will be shown from the following table of comparison, extending from 1875 to 1884:

Year.	Butter (including Butterine).	Cheese.	Year.	Butter (including Butterine).	Cheese.
	cwts.	cwts.		cwts.	cwts.
1875	1,467,870	1,627,748	1880	2,326,305	1,775,997
1876	1,659,402	1,531,204	1881	2,047,341	1,840,090
1877	1,637,403	1,653,920	1882	2,169,717	1,694,623
1878	1,796,517	1,968,859	1883	2,334,473	1,799,704
1879	2,045,399	1,789,721	1884	2,475,436	1,927,139

Thus, while the imports of cheese into the United Kingdom increased from 1,531,204 cwts. in 1876 (the first year included in our table of exports) to 1,927,139 cwts. in 1884 (the last year for which British returns are available) an increase of 395,935 cwts., or about 26 per cent., the imports of butter (including butterine) increased from 1,659,402 cwts. in 1876 to 2,475,436 cwts. in 1884, an increase of 816,034 cwts., or over 49 per cent. These figures establish the existence of a market in Great Britain for our butter if our farmers and dairymen are willing to compete for it. Their loss of that market, so

far as they have lost it in recent years, is due chiefly, if not wholly, to the relatively inferior quality of much that has been sent; and if it is to be regained, the importance of maintaining a high standard of quality in the butter we send there cannot be too strongly emphasised; we must keep pace with the improvement in other countries. There seems no reason why, with discrimination in selection and care in shipping, Canadian butter should not acquire as high a station in the British market as Canadian cheese.

FROM THE MAY REPORT.

John H. Best, Walpole, Haldimand: The farmers of this township are turning their attention to the manufacture of cheese and raising less grain.

Finlay Anderson, E. Wawanosh, Huron: The prices of grain have been so low that the people of this vicinity have erected a cheese factory and are going to keep more cows, believing it will pay better.

E. L. White, Winchester, Dundas: The cheese business is progressing here; two or three new factories have been started in this township, and farmers are turning their attention to cheese instead of butter.

R. P. McDonald, Osgoode, Carleton: Dairying is receiving more attention than usual, judging from the number of cheese factories that have been erected.

FROM THE AUGUST REPORT.

E. P. Mitchell, Howick, Huron: Dairy produce booming. There is a general increase in this industry in Howick.

John Booth, Normanby, Grey: Creameries getting more popular and more patronized; Ayton paying 6½ cents per inch of cream in 9 inch can.

R. Coad, Ekfrid, Middlesex: Dairying is at a low ebb as to prices—both cheese and butter. There seems to be something radically wrong in the butter business—a low price is all it is worth. The whole system, as well as the butter, requires a revolution.

E. W. B. Snider, Woolwich, Waterloo: The St. Jacob's creamery is doing a very satisfactory work for farmers in this locality. The creamery system I consider especially deserves recommendation in localities where farmers apply themselves to stock raising, the milk being left on the farms.

Franklin Jones, Hillier, Prince Edward: Dairy produce is much neglected. Cheese factories reasonably convenient to all, but patronized to only one-third or one-half their capacity. No creamery in the township; no improvement in home-made butter.

Robert Anglin, Pittsburg, Frontenac: Cheese so far has valued low, and the prospects are not very encouraging at present. The production has been large. It seems to me this business is overdone.

John Downing, Caledonia, Prescott: Farmers are disgusted with the low price of dairy produce, and a great number of milch cows will be turned into beef this fall.

W. H. Berry, March, Carleton: Grass fed cattle are plentiful and cheap. Dairy produce is also abundant, with a tendency shown to improved methods in its manufacture.

FROM THE NOVEMBER REPORT.

J. Buckland, Gosfield, Essex: The state of the dairy industry here is unsatisfactory. In the first place, most of the farmers do not provide proper pastures, and good butter cannot be made from poor pasturage; very few of them put up ice, and few, if any, have proper milk rooms. Then they do not use the necessary care in skimming their milk and in colouring their butter. We have no cash market, and never will until we make marketable butter.

J. R. Stobbs, Romney, Kent: The dairy industry has not been very paying this season, as prices have been low.

Samuel Russell, Orford, Kent: Butter has been low in price this season, 10 cents per lb. having ruled for some time. It is now 15 cents. Cheese has also ruled low in price; it was 7 cents and 8 cents, but is now 11 cents per lb. I fancy there was more butter and rather less cheese made this season. Durham cows seem to be gaining in favour, though some are looking to Polled Angus and some to Holsteins, the latter, especially, for milkers.

D. McKillop, Aldborough, Elgin: The cheese market has been in a very deplorable condition. Sales in the early part of the season were effected at 6 cents per lb., in July and August at 6¾ cents. Deduct 2½ cents for making and drawing, and there is but little left for the patrons. I trust this will rouse the farmers, so that they will pay more attention to raising good stock. Much better feed the milk to calves.

John Haggan, Malahide, Elgin: I think the dairying industry of this country is open to great improvement. If factories were established for both butter and cheese, they would not have to depend on one article alone, viz., cheese. Good butter always commands a good price, and the factory conducted on scientific principles is the only place where we can get good butter.

Wm. Chalmers, Sherbrooke, Haldimand: We find that the common native breed, as a general thing, are about as good for milk as the general run of imported stock.

James McLive, Bertie, Welland: A neighbour of mine has a cross from the Devon and the Durham, and it gave the best yield of any at our cheese factory.

Martin Wattson, Bosanquet, Lambton: Prices have been so low that farmers have been holding back for winter, and several who have tested the difference prefer making butter to sending their milk to the cheese factory.

D. S. Robertson, Plympton, Lambton: Two butter factories were started in this locality this season. There is also a cheese factory (established some years ago), but it is dwindling down to almost nothing.

George Hess, Hay, Huron: There has been more cheese made than butter. Some butter factories have been changed to cheese factories.

John McMillan, Hullett, Huron: Dairy butter is low in price. Creamery butter brings a good price, and the creameries have done well this year. Creamery butter pays fully better than cheese. In order to make dairying pay, farmers must provide some kind of feed for cows when pastures fail to keep up the flow of milk.

Frank Morley, Usborne (southern part), Huron: The butter industry rather predominates over cheese in this section, the farmers preferring to feed the milk to stock.

Thomas Askin, Amabel, Bruce: Cheese making has been gaining ground here fast the last few years.

James Tolton, Brant, Bruce: Dairy interests are improving, caused by the establishing of creameries and cheese factories in the township or in its vicinity. Prices were low for both butter and cheese. Our creamery sold its butter at from 18c. to 20c.—a fair price.

James Johnston, Carrick, Bruce: Butter has been in better favour than cheese with farmers on account of prices ruling higher for the former than the latter, and this is likely to result next season in a run to butter factories.

James Brodie, Artemesia, Grey: Most of the farmers here send their milk to the cheese factory, and, find it to pay better than making butter.

James S. Grant, Biddulph, Middlesex: Butter production is at a low point. The butter factory system not being properly managed, the people have gone entirely to cheese making, and are fairly well satisfied.

J. Grimason, Caradoc, Middlesex: The prices of butter and cheese are too low to pay the farmer for his trouble. The Durhams are the best for butter, and the Devons for milk.

R. Coad, Ekfrid, Middlesex: Both butter and cheese are considerably depressed in value. This is chronic as to butter. This industry is all wrong and needs a thorough reform.

James Sifton, North Oxford, Oxford: The Holsteins are coming into favour, and it is said justly by those who have tried them.

Thomas A. Good, Brantford, Brant: I think butter for local use has paid as well, if not better, than cheese this season.

Robert Simpson, Downie, Perth: Cheese is king in this locality. Ballantyne's creamery could not live.

Duncan Stewart, North Easthope, Perth: A butter factory has been run this year, and more home-made butter is made than there was a number of years ago, people preferring to raise their calves well to sending their milk to the cheese factory. There is only one cheese factory in the township, four having closed up within the last ten years. Nearly all cows are bred to Durham males for beef.

George Follis, Wallace, Perth: Dairying on the whole is advancing annually. About two-thirds of the milk is made into cheese, and one-third into butter.

W. C. Smith, Wilmot, Waterloo: We have a joint-stock butter factory here which has been working for twelve or fourteen years, but which has never been a success. It pays an average of one-half a cent a gallon less for milk than the cheese factory.

James Reith, East Luther, Dufferin: The dairy industry is about paralyzed owing to the low price of butter and cheese. We have one cheese factory in the township and another in the township adjoining. We have also a large number of patent creameries, and a good grade of butter is produced.

Edward Irvine, South Grimsby, Lincoln: Greater attention is paid to the production of butter than cheese; but a cheese factory has been started in the township the past year, and carried on with a fair degree of success.

T. A. Walker, Ancaster, Wentworth: Cheese factories are well patronized, but a good many prefer butter-making on account of being able to retain the milk. I think a butter factory would be well patronized.

Robert Inksetter, Beverley, Wentworth: The dairy business has been a losing one all the season for farmers. Milk has brought us only from 4 to 6 cents a gallon, and butter has been no better until lately.

John Weylie, Glanford, Wentworth: The dairy interest is growing fast in this township. We have a good market in Hamilton for butter, and there is a cheese factory on the town-line on each side of us to which a large quantity of milk is supplied.

Wm. McDonald, Esquesing, Halton: Mr. M. Moyer started what is known as the Little Falls creamery, near Limehouse, last May. Most farmers in this section sold their cream at about seven cents per inch, two inches making a pound of butter.

James A. Newlove, Albion, Peel: There is no cheese factory in this township, although there is one on the border. It is not well patronized, farmers preferring to use the milk for calves and pigs.

Peter McLeod, Chinguacousy, Peel: The state of the dairy industry is good. Prices have been fair. Selling milk to cheese factories is getting more common. Jersey cattle are coming more into favour.

A. Forster, Markham, York: Butter has paid better than usual, as compared with cheese.

Henry Glendinning, Brock, Ontario: There requires to be some remedy applied to raise the standard of butter. The fault is not so much in farmers not making good butter as in the custom of selling to the

country stores, and good, bad and indifferent being thrown together. If butter was bought on its merits, the same as wheat and other farm produce, we would soon hear less about poor butter.

Platt Hinman, Haldimand, Northumberland: The Jersey grade is becoming a great favourite for butter, and also with parties using milk, and parties in towns and cities keeping one cow.

Louis P. Hubbs, Hillier, Prince Edward: There are only two creameries in the county and both are closed. Very little butter is made here for export; nearly all is wanted here; the product is mostly cheese. The Holsteins seem to be the favourite breed here now, but they are only an experiment as yet.

C. R. Allison, South Fredericksburgh, Lennox: The Holstein is now being introduced, and many of our best and largest dairymen are of opinion that this breed will supersede all others for factory use.

George Lott, Richmond, Lennox: The dairy industry has not been as profitable as it was last season, owing principally to the low price of cheese, which is generally manufactured in preference to butter, and partially to a somewhat smaller flow of milk.

Robert Anglin, Pittsburg, Frontenac: Cheese is all the go. The price has been low on an average. The production has been larger than last year, and on the whole the sales will net about three-fourths as much in money as last season. The manufacture of cheese has been better understood, and its keeping quality is far ahead of that of other years.

Alexander Ritchie, Storrington, Frontenac: Nearly all are in the cheese business, but on account of low prices there is some talk of making butter next year. It would be a good thing if every tenth cheese factory would be turned into a butter factory.

James Moulton, Lansdowne, Leeds: Durham grades, crossed with Ayrshires, are most in favour.

G. C. Tracy, Williamsburg, Dundas: Until within three years this was essentially a dairy butter section and enjoyed a good reputation: but the decline of the reputation of "American" butter in England, and the improvement of the reputation of cheese, has turned attention to cheese. I am interested in the cheese factory business, and I think the prospects encouraging in spite of low prices for the early markets this season.

James Wylie, East Hawkesbury, Prescott: The dairy industry was not a paying business this year. Cheese factories are plentiful in this township—twelve in all—and cheese was sold at 6½c., to 9c. Only good butter brings from 17c. to 20c. per lb.

W. J. Summerby, Russell, Russell: Cheese is taking the lead and driving the butter out.

W. H. Berry, March, Carleton: The dairy industry is steadily improving. Cabinet and other creamers are used in considerable numbers.

John A. Jackson, Eldon, Victoria: We had a cheese factory in operation several years, but for the past few years it has been idle. Butter is about the only dairy produce sold.

James Tindle, Smith, Peterboro': Butter is not so much made as usual, owing to the failure of pasturage and the establishing of more cheese factories.

John Hollingworth, Watt, Muskoka: Butter during the past season has been at a discount. Cheese is not made in this immediate locality. I have heard that the cheese factory at Huntsville was prematurely closed, owing to some dispute between the proprietors and farmers.

J. M. Ansley, McDougall, Parry Sound: With good pasture, plenty of pure water, and fat cattle, butter here should be of the very best, but it is otherwise. I think the creamery question could be agitated here with very great advantage.

THE APIARY.

The past season has not been a very favorable one for the apiarist. A great many bees died during the winter, owing to the severity of the weather, and those that survived were in rather a weakly condition in the spring. The honey-gathering season was short, both as to clover and basswood bloom, and the weather in most parts of the Province was too wet, cold and cloudy for an abundant harvest of honey. The result was that, though bees multiplied to an unusual extent, the honey product was deficient and many bee-keepers had to supply their swarms with artificial nutriment. This was the prevailing condition of things at the beginning of November, but a very considerable number of apiarists, on the other hand, reported an average yield of excellent honey. Complaints are occasionally made that some Canadian bee-keepers are imitating the evil practices of American apiarists by putting on the market a quantity of so-called honey which bears about the same relation to the genuine article that oleomargarine does to butter. There is no reason to suppose, however, that these practices are at all extensively indulged in.

FROM THE MAY REPORT.

C. Darling, Howard, Kent: Bee culture has become a matter of considerable importance with a great many farmers, but the last winter has nearly annihilated them. It would be interesting to us to know in what localities they have escaped, and how they were protected, if at all.

James Davidson, Yarmouth, Elgin: There has been a great mortality among bees: except where they had the very best winter care they have all perished with the steady cold.

James Lovell, Brooke, Lambton: Fully eighty per cent. of the bees in this locality have been killed by the severe frost in winter.

Malcolm McDonald, W. Wawanosh, Huron: Bee-keeping is becoming quite an industry in this section, but I think fully one-half of them have succumbed to the long, hard winter.

R. Postans, Trafalgar, Halton: The past winter will long be remembered by bee-keepers if not by others. The cold began very early and kept on with unusual steadiness.

FROM THE NOVEMBER REPORT.

R. A. Brown, West Nissouri, Middlesex: The industry of the apiarian is like that of all other branches of farming: where wisdom, forethought, skill and plenteous labor are bestowed, there is a margin of profit always, although there do come years of adversity like the one just past.

PART III.

VALUES, RENTS AND WAGES.

VALUES OF FARM PROPERTY AND CROPS.

The average value per acre of the various kinds of farm property, on the land occupied in the several districts of the Province, are given in the following table for each of the two past years:

Districts.	Farm land.		Buildings.		Implements.		Live stock.		Totals.	
	1885.	1884.	1885.	1884.	1885.	1884.	1885.	1884.	1885.	1884.
	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
Lake Erie	37.35	38.28	10.45	10.15	2.78	2.72	5.38	5.38	55.96	56.53
Lake Huron	32.09	32.95	7.90	7.54	2.18	2.22	5.19	5.45	47.36	48.16
Georgian Bay	24.00	23.76	6.70	6.14	1.91	2.00	4.32	4.52	36.93	36.42
West Midland	43.29	43.73	12.47	12.30	3.19	3.30	6.99	7.44	65.94	66.77
Lake Ontario	44.99	44.36	14.21	13.29	3.50	3.37	6.75	6.85	69.45	67.87
St. Lawrence and Ottawa	18.04	18.04	5.77	5.51	1.66	1.56	3.19	3.27	28.66	28.38
East Midland	15.80	15.18	4.38	4.01	1.23	1.13	2.54	2.42	23.95	22.74
Northern Districts	4.13	4.29	1.06	1.05	.34	.37	.97	.95	6.50	6.66
The Province	28.77	28.81	8.38	7.99	2.23	2.20	4.62	4.75	44.00	43.75

The average value for the Province of all kinds of farm property shows an increase in 1885 over 1884 of exactly 25 cents per acre. This increase is made up by the Lake Ontario, East Midland, Georgian Bay and St. Lawrence and Ottawa districts, those showing the greatest relative increases being in the order named. In land there was a fall in the average value of 4 cents per acre. On the total occupied acreage of 1884, 21,712,316 acres, this apparently trifling reduction is equivalent to a decrease in the aggregate value of no less than $868,492. The occupied acreage, however, increased in 1885 over the previous year by 62,983 acres; so that, notwithstanding the drop in the value per acre, the sum of the value of farm lands in the Province shows an increase of $943,318. The total acreage was returned as 21,775,299 acres, and the total value as $626,422,024. The reductions were, in the Lake Erie Counties, 93 cents per acre; the Lake Huron, 86 cents; the West Midland, 44 cents; and the Northern districts, 16 cents. There were increases in the others, except the St. Lawrence and Ottawa counties, where the value of land remained stationary, the greatest increase being in the Lake Ontario district, viz., 63 cents per acre. Farm buildings show a healthy increase in every district, the average increase for the Province being 39 cents per acre. In implements, four of

the groups show increases and four decreases, but the former slightly preponderate. The Lake Ontario counties make the best record in this class also. The value of live stock underwent an average decrease for the Province of 13 cents per acre. The decreases were: West Midland Counties, 45 cents; Lake Huron, 26 cents; Georgian Bay, 20 cents; Lake Ontario, 10 cents; and St. Lawrence and Ottawa, 8 cents. In the Lake Erie counties values were stationary, and in the East Midland and Northern districts there were increases of 12 cents and 2 cents per acre respectively.

The following table gives the average value, by districts, of the various field crops, the combined average, by districts, of all crops, and the provincial averages of both, for the year 1885:

Crops.	Lake Erie.	Lake Huron.	Georgian Bay.	West Midland	Lake Ontario.	St. L. & Ottawa.	East Midland	Northern Districts.	The Province.
	$	$	$	$	$	$	$	$	$
Fall Wheat	19.59	20.51	19.21	19.72	21.76	15.63	16.80	16.70	20.00
Spring Wheat	11.31	8.32	7.31	7.76	8.72	13.65	8.24	12.42	9.20
Barley	15.64	15.88	14.01	16.29	15.64	14.22	13.97	13.21.	15.27
Oats	12.03	11.86	10.39	12.00	11.42	10.80	9.87	9.29	11.27
Rye	9.32	9.85	11.33	8.34	8.38	9.66	8.21	9.13	8.96
Pease	11.82	14.36	12.63	13.80	12.30	11.11	11.20	12.73	12.57
Corn	19.41	18.88	14.72	18.83	14.78	14.16	11.08	10.99	17.86
Buckwheat	8.83	8.32	7.84	8.28	9.62	10.45	9.00	8.28	9.71
Beans	15.23	17.63	13.71	15.26	17.38	20.91	14.23	22.33	16.12
Hay and Clover	15.46	14.47	11.17	15.69	14.62	13.61	11.98	10.93	14.12
Potatoes	36.49	66.05	76.99	45.48	45.12	61.62	57.41	61.05	54.27
Carrots	116.25	147.93	131.05	120.56	133.78	106.47	116.25	86.01	124.70
Turnips	94.79	109.92	106.87	88.74	99.06	84.46	73.21	65.14	94.90
Averages	16.33	17.08	15.22	17.11	16.18	14.31	12.94	14.36	15.78

The West Midland counties give the highest combined average for all crops, viz., $17.11; the Lake Huron counties are only 3 cents lower, and the other districts come in this order: Lake Erie, Lake Ontario, Georgian Bay, Northern districts, St. Lawrence and Ottawa, and East Midland. In fall wheat the Lake Ontario counties stand first at $21.76 per acre, or $1.76 above the provincial average; all the other districts are under that average, except the Lake Huron district, which is only 51 cents above it. The St. Lawrence and Ottawa counties are easily first for spring wheat, at $13.65 per acre, the Northern districts coming next at $12.42. Barley yielded most profitably in the West Midland district at $16.29 per acre, $1.02 above the provincial average; the Lake Huron counties came next at $15.88, per acre, and the Lake Ontario and Lake Erie districts are equal at $15.64. The last-named district had the best acreage return from oats, at $12.03 per acre, though the West Midland district was only 3 cents lower. In potatoes there is great variation. The Georgian Bay district makes by far the best showing, at $76.99 per acre, or $22.72 above the average for the Province, and $40.50 above that for the Lake Erie counties, or more than twice as much. The Lake Huron counties stand second at $66.05, the St. Lawrence and Ottawa third at $61.62, and the Northern districts fourth at $61.05. In these northern latitudes the potato rot was less destructive than in the more southern portions of the Province.

The values of last year's wheat, barley, oats, rye and pease crops in the Province are given elsewhere, amounting in the aggregate to $60,212,854. The ascertained values of the other field crops are as follows: corn, $2,996,848; buckwheat, $600,024; beans,

$397,251; hay and clover, $32,033,727; potatoes, $8,668,460; carrots, $1,125,254; turnips, $9,708,505; total, $55,530,069. Hence, the total value of all the field crops of Ontario for 1885, exclusive of the fruit crop, the value of which it has been impossible to obtain accurately—amounted to the enormous figure of $115,742,923.

RENTS OF LEASED FARMS.

Last year returns of the rent paid for leased farms in Ontario were obtained from 10,967 farmers. In 1884 the number reporting was 8,589, in 1883, 22,868, and in 1882 about 1000. The following table gives the averages of rent paid in the several districts, and average for the Province, in each of the four years:

Districts.	1885.	1884.	1883.	1882.
	$ cts.	$ cts.	$ cts.	$ cts.
Lake Erie	2.90	2.84	2.92	3.02
Lake Huron	2.68	2.74	2.70	2.78
Georgian Bay	2.32	2.26	2.25	2.47
West Midland	2.92	2.90	2.91	2.98
Lake Ontario	3.35	3.29	3.31	3.43
St. Lawrence and Ottawa	2.25	2.13	2.13	1.97
East Midland	2.37	2.32	2.28	2.76
Northern Districts	2.01	1.48	1.83	.....
The Province	2.80	2.75	2.75	2.79

A comparison of this table with the table of the acreage value of farm property will show how closely the rate of rent corresponds with the selling value per acre. With the single exception of the East Midland district, the various districts stand in the same order as to rent that they do as to value. Yet it is curious to note that in the districts in which the rentals are the highest, the ratios of those rentals to the value of the property are the lowest, and *vice versa*. This will be apparent from a comparison of the tables with the following per centages, showing the ratio the average rent bears to the average value of land and buildings together in the several districts: Lake Erie, 6 per cent.; Lake Huron, 6; Georgian Bay, 7½; West Midland, 5½; Lake Ontario, 5¾; St. Lawrence and Ottawa, 9½; East Midland, 11¾; Northern districts, 38¾. The rate of rent in the Northern districts is, for obvious reasons, out of all proportion to the value of the property; and to a lesser degree the same is true of the East Midland district, where the average value of farm property is greatly reduced by the inclusion of Haliburton in the calculation. For the Province generally, the average rental of farms is 7½ per cent of the average value.

FARM LABOR AND WAGES.

The labor supply during the past year for the various operations of the farm was reported to be quite adequate to the needs of the farmer in almost every section of the Province. Only in a few rare and exceptional instances—as, for example, in some localities of Muskoka and the Ottawa valley, where the lumber mills absorb the surplus labor, or on farms where there is a deficiency of labor-saving implements—has there been any inconvenient scarcity of farm hands. In consequence of this abundance the general tendency of wages was everywhere reported as downward, as will be seen from the following table :

Districts.	Farm hands.								Domestics.	
	Per year.				Per month.				Per week.	
	With board.		Without board.		With board.		Without board.		With board.	
	1885.	1884.	1885.	1884.	1885.	1884.	1885.	1884.	1885.	1884.
	$	$	$	$	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
Lake Erie	157	162	246	253	16 96	18 83	26 07	28 13	1 44	1 50
Lake Huron	163	169	263	257	17 68	19 73	27 95	29 72	1 46	1 49
Georgian Bay	159	165	257	260	17 52	19 66	27 82	29 92	1 48	1 47
West Midland	159	167	254	256	17 31	19 58	27 71	28 94	1 52	1 52
Lake Ontario	162	168	255	256	17 38	18 95	27 19	28 65	1 57	1 52
St. Lawrence and Ottawa	158	170	248	258	17 16	19 99	26 67	29 35	1 52	1 53
East Midland	160	171	246	256	16 93	19 03	26 39	29 10	1 50	1 53
Northern Districts	161	182	267	287	18 55	21 21	28 65	31 19	1 49	1 49
The Province	160	167	253	257	17 32	19 44	27 18	29 11	1 51	1 51

This reduction of wages is attributable to various influences. First among these is mentioned the prevailing low prices of all agricultural products, accompanied by an inactive demand and scarcity of money, which are inducing farmers to economize in all directions, to undertake no expensive improvements, and to dispense with all hired help beyond what is absolutely necessary. Then, the marvellously rapid development of machinery in agricultural operations in recent years has in part wrought a revolution in the matter of farm labor. With the adoption of the numerous appliances now provided for facilitating and expediting the various tasks of the husbandman, there is no longer any necessity for the wonted rush and worry at the haying and harvesting seasons, or for farmers being put to their wits' end to obtain sufficient help to secure their crops in good order. Such invaluable aids as the sulky rake, the horse fork, the hay loader, the rack lifter, and above all the self-binder, have effectually disposed of that difficulty. These and kindred machines for the more important branches of farm work are coming to be regarded as absolutely indispensable to the progressive agriculturist, even on ordinary hundred acre farms : and during the past year they have multiplied extensively. This has especially been the case with the self-binder, which is generally commended as the greatest

boon to the farmer produced for many years. The number of binders made for the season of 1885 was 8,000; while the number being built for the harvest of 1886 is 9,100.*

The expensiveness of the machine and the cost of the cord used for binding are mentioned by a few correspondents as interfering considerably with its usefulness and popularity; but in general these are regarded as very minor drawbacks compared with the great utility of the binder, in enabling the farmer to save his crop speedily, in excellent order, with a minimum expenditure of labor, and less at the mercy of the weather than under the old system. The immediate and direct effect of this universal adoption of machinery has been, of course, to greatly lessen the demand for hired help, and for the present, at least, to reduce the rate of wages. But it is likely, on the other hand, ultimately to benefit the agricultural laboring class by making their employment more constant and less spasmodic. Among the other causes which to a greater or less extent are said to have contributed to the decline of wages are,—the closing of railway construction on the Canadian Pacific and other lines, which has released large numbers of laborers: the return of many young men from the West and North-West; the growing disposition among farmers to devote less attention to grain-growing and more to grazing and stock-raising, in which less help is required; and dulness in lumbering operations, though in a few of the lumber districts of northern and eastern Ontario that industry is described as fairly active and as maintaining the rate of laborers' wages up to its normal point. Still another cause of low wages, inferentially alluded to by correspondents, is the inferiority of so many men who pass as agricultural laborers. It is a subject of universal complaint that ordinary navvies who know little or nothing of farm work, as well as many lazy and worthless characters, impose themselves on farmers and rather hinder than help them, while at the same time their presence tends to swell the labor supply and thus to keep down the rate of pay for good hands. Nevertheless, correspondents say that really desirable agricultural laborers, who know their business and are willing to work, are always in request at fair rates of pay. Several correspondents state that there would have been a still further decline in farm wages but for the disturbance in the North-West, which temporarily withdrew a large number of young men from the avocations of the farm in some parts of the Province.

The servant girl question is becoming a much more serious problem to our Ontario farmers than that relating to male help. In this case the very opposite evil is encountered—scarcity. As several correspondents express it, they cannot be obtained "for love or money," outside of certain very exceptional localities in the most thickly settled parts of the Province. This all but universal scarcity is attributed chiefly to the superior attractions of the cities, towns and villages, where so many young women find employment in factories, at the needle, or in various other ways, and where domestic service is not only lighter and more congenial, but more liberally paid than in the majority of farm houses. The fact of so many young women forsaking the country for the town entails upon farmers' wives overwork and much real hardship, which in obvious ways must seriously impair the condition of the agricultural community unless some effective means are devised for supplying the deficiency so widely complained of. Whether this should be done by increasing the attractiveness of home life on the farm, so as to lessen the tendency of young women to flock to the towns, or by filling the places of those who leave by female immigration or in some other way, is a subject well worthy the consideration of our farmers, in their clubs, institutes and associations.

* Mr. Adam Cochrane, President of the Cochrane Manufacturing Company, St. Thomas, writes under date of March 3rd, 1886: "In reply to your enquiries of the 25 February I beg to say that the number of binders manufactured in Ontario in 1885 were sold as follows: number made last year, 8,000; sold in Ontario, 6,500; sold in Quebec and elsewhere, 540; sold in Manitoba, 650; number held over, 310; number built for harvest of 1886, 9,100. I have no estimate of the number held over from the harvest of 1884, which I think could not have been less than 350, and I have only given the sales of 1885 from the output of that year. I think the number sold in Manitoba last year could not have been less than 800."

FROM THE MAY REPORT.

T. F. Kane, Maidstone, Essex: The supply of farm labor is sufficient just now.

John Buckland, Gosfield, Essex: The supply is equal to the demand, but good help on the farm will always command fair wages.

W. C. Fletcher, Tilbury East, Kent: No scarcity of male servants; but servant girls are scarce.

John Bishop, Orford, Kent: About as many as required. Tile ditchers can get plenty of work at fair wages.

A. J. C. Shaw, Camden, Kent: Enough laborers; about $16 to $20 is paid for good hands for about six or seven months in the year, which is about as long as any farmer hires for now.

T. M. Nairn, Malahide, Elgin: A sufficient supply of farm labor at $15 per month, with board.

George A. Marlatt, Bayham, Elgin: There is an abundance of farm laborers and many cannot get employment; wages from $12 to $14 with board.

Robert Jepson, Walpole, Haldimand: There is a sufficient supply of farm labor; wages $15 to $18 with board; without board, about $25.

J. H. Houser, Canborough, Haldimand: Farm laborers are scarce at $13 to $18 with board.

J. J. Sherk, Bertie, Welland: A sufficient supply of farm labor: wages average $15 per month with board.

Joseph Garner, Pelham, Welland: There is a scarcity of farm laborers here; wages $15 per month with board, without board $22 to 26.

John A. Law, Stamford, Welland: Farm hands are plentiful, but not generally good. The best men seem inclined to go to towns and cities and try something else. Wages $18 to $20 with board, or by the year $150 to $180 with, and $250 to $300 without board.

Isaac Unsworth, Euphemia, Lambton: A sufficient supply of farm labor. Wages $17 with board, when engaged for six months.

Robert Montgomery, Enniskillen, Lambton: Good practical farm hands are scarce, inferior hands having to take their place, at about $13 per month with board.

Robert Osborne, Plympton, Lambton: A sufficient supply of farm laborers; wages are generally lower this year.

T. M. Kay, Usborne, Huron: The labor supply fully equal to demand; wages about $20 per month with board, for the summer season only.

James Armstrong, Stanley, Huron: Farm laborers are now plentiful at $18 to $20 with board, for summer months; no demand in winter.

John Rudd, Goderich, Huron: A sufficient supply of farm laborers at $18 to 20 per month, for six to seven months in the year.

John Varcoe, Colborne, Huron: Plenty of farm help this year, but domestic servants are very scarce. Good men get $20 per month with board.

Finlay Anderson, E. Wawanosh, Huron: Laborers are plentiful at $18 with board; $26 without board.

Peter Corrigan, Kinloss, Bruce: There is a scarcity of farm laborers of the proper kind; wages $18 and $20 a month for six months, with board.

Daniel Sullivan, Brant, Bruce: Plenty of farm laborers; some looking for work and none to be had. Wages from $14 to $16 per month with board.

Robert B. Fleming, Saugeen, Bruce: I hear no complaints about a scarcity of laborers; quite a number left for the United States in the spring. The volunteers going off on Monday will no doubt make a difference. Wages about $18 per month, with board.

Robert Oliver, Artemesia, Grey: The supply is sufficient; good farm men get about $17 per month, with board.

W. Totten, Keppel, Grey: Laborers are in fair supply at from $12 to $16 per month.

John Darby, Vespra, Simcoe: Fairly sufficient just now; through haying and harvesting we could do with more; wages about $16 per month, with board.

James Farney, Flos, Simcoe: There is a sufficient supply of farm laborers, at wages from $15 to $20 per month, with board.

Archibald Thomson, Orillia, Simcoe: There is a sufficient supply at present; wages for the summer $16 to $18 per month, with board.

Benjamin Watterworth, Mosa, Middlesex: There is a sufficient supply; wages, by the six or seven summer months, about from $12 to $18 per month, with board.

Richard Coad, Ekfrid, Middlesex: A moderate supply; just sufficient, I think. Wages are reduced, but how far I cannot say.

D. Leitch, Caradoc, Middlesex: Plenty of farm laborers at from $12 to $18 per month, with board, according to ability.

James A. Glen, Westminster, Middlesex: Plenty of farm hands; wages average $16 to $20 per month for the summer, with board, and about $240 per year for married men who board themselves, with free house and garden, firewood, etc.

Richard Joliffe, Dorchester North Middlesex: A full supply of laborers; wages about $14 with board to $20 without board, per month. In reference to working hands on the farm, I might say that if some who live in towns and cities would feel like taking hold on a farm instead of eking out a mere existence where they are, the advantage would be mutual.

Peter Stewart, Williams West, Middlesex: There is a sufficient supply, mostly with board from $15 to $18 per month, for the summer months.

Elisha Ironside, London, Middlesex: The farmers find no difficulty in securing help; wages about $14 per month by year, or $20 per month for six months, with board in both cases.

Alex. Douglas, Ekfrid, Middlesex: Female help is very scarce, and suitable help could find constant employment at good wages.

James Bradburn, Dereham, Oxford: A good supply of laborers; wages, say from $14 to $17 per month for seven months, with board.

Alex. McFarlane, Norwich South, Oxford: There seems to be plenty of laborers; wages about $15 with board, $25 without.

S. C. Tuttle, Oxford East, Oxford: There seems to be a sufficient supply; wages about $17 per month, for from six to seven months.

Thos. Baird, Blandford, Oxford: There have been plenty of farm laborers this spring, more so than for years. The average rate of wages without board is $26; with board, $17.50.

Wm. Brown, Blenheim, Oxford: There is a moderate supply of help; the trouble is to get good men.

Thomas A. Good, Brantford, Brant: I think there is a better supply than last year, but not a great many are hired in this neighborhood; wages $16 to $18 and board per month, for seven or eight months, and $20 to $22, without board, by the year.

Daniel Burt, Dumfries South, Brant: A good supply of laborers. Improved machinery has done wonders for the farmer in regard to the labor question; wages $12 to $16 with board, $20 without.

J. Brown, vicinity of Stratford, Perth: A fair supply of farm laborers; wages with board, $15 to $17; without board, $25 to $26.

R. Francis, Fullarton, Perth: As many farm laborers as required: wages about $18 per month with board, for seven or eight months.

W. J. McLagan, Logan, Perth: There is a good supply of farm laborers; wages about $16 with board, $24 without board.

R. Forrest, Elma, Perth: Farm laborers very scarce; wages $20, with board.

J. Stewart, Mornington, Perth: There is a sufficient supply of farm laborers; wages $18 per month with board, for six months.

W. Hearn, Guelph, Wellington: Lots of farm laborers this season; wages about $15 per month with board.

R. Cromar, Pilkington, Wellington: Farm laborers plenty; wages by the year $40 less than last year.

J. Black, Eramosa, Wellington: Farm hands are plenty at $16 per month, with board; without board, $25.

A. Ray, Waterloo, Waterloo: No scarcity; wages per year, with board, $160 to $180; without board, $260.

T. B. Snider, Waterloo, Waterloo: Supply of farm laborers quite sufficient; wages about $13 per month; without board $20, and not including house rent.

I. Groh, Waterloo, Waterloo: Scarcity of good hands; wages $14 to $18, without board and washing.

H. Liersch, Wilmot, Waterloo: Supply of farm laborers plenty; average wages $17; without board $25.

H. McDougall, Luther East, Dufferin: A sufficient supply available; wages with board, about $16 per month for six or seven months.

G. Cumming, Mulmur, Dufferin: Farm laborers very scarce; wages for boys, $7 to $10; youths, $10 to $16; men, 16 to $24 per month for from five to seven months of the year, with board.

John H. Lindebury, Gainsboro', Lincoln: There is a scarcity of farm laborers, with wages from $14 to $20 per month with board, and poor hands at that.

Adam Spears, Caistor, Lincoln: There is a sufficiency of laborers at $16 per month, with board.

Isaac A. Merritt, Grimsby, Lincoln: There is a sufficient supply of farm laborers, with wages at $15 per month, with board.

Frank Wyatt, Louth, Lincoln: A scarcity; wages from $12 to $16 per month, with board. A few good men are better paid.

Alexander Servos, Niagara, Lincoln: I hear no complaints from farmers about procuring help this spring; wages, with board, from $13 to $17 per month.

Archibald Jarvis, Binbrook, Wentworth: Labor is scarce; wages from $15 to $20 per month, with board.

George F. Lewis, Saltfleet, Wentworth: There is a scarcity of male and female help, especially the latter. Men's wages about $18 per month, with board.

Ralph F. Little, East Flamboro', Wentworth: Plenty of farm laborers at present; wages from $17 to $18 per month, with board, during the summer months.

R. Postans, Trafalgar, Halton: I do not know of any scarcity of hands. Wages run as high as $20 per month and board, but only for first-class hands.

John Shaw, Esquesing, Halton: There seems to be a sufficient supply of farm laborers. The rate of wages is from $16 and upwards, depending a good deal on the kind of man. A great number of self-binders is likely to be introduced this season, so that the farmer will be less at the mercy of the hired man.

John Sinclair, Chingnacousy, Peel: A fair supply of farm laborers, such as they are, but there is an increasing scarcity of good ploughmen; wages $20 per month, with board. I have noticed this spring an unusual number of applicants for situations on the farm of the artisan class—persons who have scarcely any knowledge of farm work. It is to be regretted that so many of our farm laborers have gone to the North-West and the large towns, and that inexperienced men have come to take their places on the farm.

William Porter, Toronto Gore, Peel: There seems to be sufficient for our wants. Around here we usually hire for eight months at about $18 per month, with board.

N. A. Malloy, Vaughan, York: A scarce supply, with wages at $18 per month, and board, for seven months.

D. B. Nighswander, Markham, York: Farm laborers are rather scarce, but I think that in due time we will have a full supply. Wages from $16 to $20 per month for seven or eight months.

Joseph D. Davidson, North Gwillimbury, York: There are plenty of men this spring; wages are lower than last year, being from $14 to $16 per month, with board.

R. R. Mowbray, Pickering, Ontario: There has been a sufficiency of farm laborers in this part of Pickering this spring to meet the demand: the first time the supply was equal to the demand for years. Wages about $15 per month, with board, for the summer months.

Henry Glendenning, Brock, Ontario: A good supply of farm laborers, but a great scarcity of domestic servants. Wages from $16 to $20 per month, with board.

Joseph McGrath, Mara, Ontario: Farm laborers are scarce. The average rate of wages is $18 per month, with board, for a term of seven months.

William Windatt, Darlington, Durham: The principal reason for laborers being so scarce and wages so high is that there is very little for them to do during the winter.

Robert Colville, Clarke, Durham: About an average supply at $16 per month, with board.

Walter Riddell, Hamilton, Northumberland: About sufficient; no great complaint of want; wages from $12 to $20 per month, with board.

Samuel N. Smith, Sophiasburg, Prince Edward: There seems to be plenty of men so far with us, for farmers are not hiring as much as usual, owing to money being scarce. Wages about $18 per month, with board, for the best men.

W. H. Montray, Amherst Island, Lennox and Addington: A sufficient supply of farm labor at $16 per month, with board; none hired without board.

John Sharp, Ernesttown, Lennox and Addington: Farm laborers are plentiful. The rate of wages is about $16 per month, for say six to eight months.

Robert Anglin, Pittsburg, Frontenac: Farm laborers are scarce at $16 with board, and $24 without board.

Hugh Hogan, North Crosby, Leeds: There is no scarcity of farm laborers.

Gideon Fairbairn, Edwardsburg, Grenville: A sufficient supply of laborers; there is so much machinery in use now that farmers require fewer hands.

A. Gilday, South Elmsley, Leeds: There is a sufficient supply of farm labor; average wages $14 per month, with board.

A. G. Macdonell, Williamsburg, Dundas: Farm laborers are scarce here at $16 to $18, with board.

John McRae, Roxborough, Stormont: The supply of farm laborers is sufficient; female servants are scarce.

James Clark, Kenyon, Glengarry: The supply of farm labor is fully up to the demand.

John McLellan, Clarence, Russell: There is any number of laborers at $12 to $15 per month, with board.

P. R. McDonald, Osgoode, Carleton: Farm laborers are very scarce.

Isaac Wilson, March, Carleton: Farm labor is plentiful at $15 to $18 per month, with board.

Peter Anderson, McNab, Renfrew.: There is a sufficient supply of farm labour; wages from $14 to $16 per month, with board.

Peter D. Campbell, Drummond, Lanark: Laborers are not very plentiful; wages are pretty much the same as last year.

Peter Guthrie, Darling, Lanark; There is a good supply of male labor; female help is very scarce, girl's wages being $7 to $8 per month.

H. Reazin, Mariposa, Victoria: The supply is good at $18 per month, with board, for six months.

A. Hawkins, Eldon, Victoria: Farm laborers are rather scarce on account of so many in the country going as volunteers to the North-West.

Nelson Heaslip, Bexley, Victoria: The supply is ample; wages about $16 per month, with board, for a term of six months.

Dawson Kennedy, Otonabee, Peterborough: The supply is sufficient at about $18 per month, with board.

Porter Preston, Belmont, Peterborough: No scarcity of farm laborers; wages, with board, from $13 to $17 per month.

Wm. Davis, Sidney, Hastings: There seems to be a sufficient supply of farm laborers; wages average $15 per month, with board.

J. C. Hanley, Tyendinaga, Hastings: Rather scarce; I do not know a man unemployed; wages about $15 per month, with board.

James Gay, Huntingdon, Hastings: Very many this spring; wages, with board, about $13 per month.

William Watt, jr., Wollaston, Hastings: Farm laborers are quite plentiful; wages, with board, from $15 to $20 per month.

John Wilson, Dungannon, Hastings: Very scarce; no men to be had: wages, $18 per month, with board.

James Young, Morrison, Muskoka: Plenty of men at $14 to $18 per month.

Donald Grant, Monck, Muskoka: Labor very scarce; wages about $20 per month, with board.

John H. Osborne, Stephenson, Muskoka: A sufficiency, or nearly so; wages $20 per month, with board.

Charles Robertson, Cardwell, Muskoka: Farm laborers are scarce; wages $15 to $20 per month, with board.

Robert F. Ogle, Carnarvon, Algoma: The supply is equal to the demand; farmers to a great extent exchange work. Wages—$12 to $16 per month, with board, are the usual wages this season.

FROM THE AUGUST REPORT.

Robert Manery, Mersea, Essex: There have been four self-binders working in this locality. They do the work well, but the twine manufacturers must produce twine for less than 16c. to 20c. per lb., or else they will have to keep their binders at home. My neighbor got seven and a half acres cut with the binder, and it cost $3.40 for cord to bind the crop, at 16c. per lb.; and the next lot of cord he sent for cost 20c. per lb. A man could bind it by hand for less money than it takes to buy the cord.

George M. Baird, Harwich, Kent: Laborers are plentiful and wages lower than they have been in past years. Self-binders have been introduced to a greater extent this year, and it is only a matter of two or three years till old reapers will be a thing of the past. The labor of haying and harvesting is greatly supplemented and facilitated by means of the hay-fork, rack-lifter, binder, tedder, etc., which are used, and will be universally used in a few years.

Edmund B. Harrison, Howard, Kent: Owing to the introduction of self-binders, tedders, etc., the rate of wages has not exceeded $1.50 per diem so far as I know. During the season many men could scarcely find employment. Wages must be much lower before farmers can give permanent employment, with the present prospect of prices for farm produce.

Sheldon Ward, Malahide, Elgin: The self-binder is fast coming into use, agents telling me of some thirty-five having been sold in this section—some fifteen in Malahide.

Peter Stalker, Aldborough, Elgin: Some four or five self-binders are used here, and are doing good work. The greatest objection to them is that they are heavy on horses.

A. Reid, Crowland, Welland: The self-binder is coming extensively into use. It is about equal to eight men.

Robert Rae, Bosanquet, Lambton: Wages are still higher than the farmer can afford to pay. Men are getting from $175 to $210 by the year with board, or $15 per month for winter and $18 to $20 for the summer months. The demand is not so great on account of labor-saving implements, but men will not accept lower wages.

D. S. Robertson, Plympton, Lambton: Quite a number of self-binders introduced into the neighborhood this season, reducing the wages to $1 per day and $18 per month, which is fully a reduction of 33⅓ per cent.

G. Edwin Cresswell, Tuckersmith, Huron: Owing to the very general use of labor-saving machinery, self-binders, mowers, hay rakes and hay loaders, horse forks, etc., the general wail which used to be heard at this season of the year of want of hands has ceased.

Peter Clark, Culross, Bruce: The mowing machine and sulky rake have greatly lessened the labor and worry of hay making, enabling the farmer to store his hay in good condition. If manufacturers of self-binders would place their implements within the reach of 100-acre farmers, the demand for them in this section would be very great. Many who would like to buy a binder cannot do so at the present price. Will manufacturers consider the matter? Everything the farmer has to sell is low in price at the present time.

Peter Corrigan, Kinloss, Bruce: There is every reason to believe that the self-binder is going to take the place of the rake-reaper. The combination of manufacturers in prices prevents farmers from buying at present.

Peter Harris, Euphrasia, Grey: The greatest labor-saving machine, considering its cost, is the rack-lifter. I recommend it to all farmers who have barns in any way suitable.

John Booth, Normanby, Grey: Self-binders are getting to be the order of the day. The great drawback is the cost of binding cord. Our next want is a pea harvester.

George Sneath, Vespra, Simcoe: Quite a few self-binders have been used with such satisfaction that there is no doubt they will come into general use next season.

J. M. Henderson, Adelaide, Middlesex: The labor supply has been sufficient, and in consequence, wages have not been as high as formerly. This is also due to the general use of self-binders and other implements, such as the horse rake, hay loader and hay fork.

Andrew Robinson, McGillivray, Middlesex: Three self-binders this year for one there was last year.

James Anderson, East Zorra, Oxford: Not much of the grain will be bound by hand this season, as those not owning binders hire them to cut and bind at about $1 per acre.

Wm. Donaldson, East Zorra, Oxford: Self-binders will, I think, keep day labor down, but will not interfere with yearly wages.

John Rae, Eramosa, Wellington: Binders are being brought in as old reapers give out, but many hold back owing to the high price.

Robert Cromar, Pilkington, Wellington: Most of the farmers manage their haying and harvesting without extra help by the use of self-binders and other implements.

Richard Remnelson, North Dumfries, Waterloo: Self-binders are now felt to be about as indispensable as the reaper was about twenty-five years ago.

James Dill, South Grimsby, Lincoln: The self-binders have done most of the harvesting. They are a great assistance to the farmer, doing about the work of four or five men, and doing it better. In fact I don't know how we could get through harvest without them.

E. D. Smith, Saltfleet, Wentworth; Plenty of hands glad to work for fair wages. Self-binders attend to the fall wheat and other grains. One farmer buys a machine and cuts for his neighbors at $1 per acre, the neighbor finding the twine. The farmer follows the machine and sets up the wheat. Hired men don't ask $2 per day any more.

A. W. Peart, Nelson, Halton: The use of binders has diminished the demand for labor, but not to a great extent. They are not in general use, and are scarcely found at all on farms less than 200 acres.

J. D. Evans, Etobicoke, York: The use of self-binders is becoming universal here, completely killing the harvest haste.

Robert C. Brandon, Brock, Ontario: In the dissemination of useful hints to the farmers through your circular please mention the Wilson hay loader. We have bought one this year; it is the first in our township. It can easily accomplish the work of three men in loading hay, as it takes up the windrow and places a large load on the wagon in from three to seven minutes quite easily. We have handled 115 tons of hay with ours, and with no trouble or expense whatever. In fact, it is as great a curiosity as the binder itself, and scores of people have come to see it operate.

C. A. Mallory, Percy, Northumberland: Farmers are becoming independent of day laborers, and generally with the help of machinery can take off their crops with the same help that they require to fit the land to put them in.

P. R. McDonald, Osgoode, Carleton: There are a few self-binders introduced in this neighborhood, but do not give general satisfaction. I think as soon as the manufacturers' combination breaks through we will get a better article at a reasonable price.

John H. Delamere, Minden and Anson, Haliburton: The supply of agricultural implements has improved immensely here in the past four years. Prior to that there was scarcely such a thing used as even a horse rake.

Amos Hawkins, Eldon, Victoria: We are well supplied with labor, and at reasonable rates, thanks to the self-binders. Before their introduction we had to pay $40 a month to almost any kind of a man, and glad to get him: but now you can get a good man for $30 a month, and even less, and men are glad to get a place.

Henry W. Gill, Watt, Muskoka: Farmers here are gradually, as they get able, purchasing machinery. There are now three reapers and two mowers in the township. A good many sulky rakes have been introduced this season. Besides the saving of labor by machinery, it causes the farmer to be more particular in preparing and deepening the land so as to use it to advantage.

FROM THE NOVEMBER REPORT.

W. G. Morse, Mersea, Essex: Wages are lower than they have been for many years past, and I think are likely to be lower still, as there are five men for every vacancy. There has generally been a large number of men employed in the lumber business. This is done now, which is another reason. In winter men cannot get work half the time.

John Haggan, Malahide, Elgin: Wages are not likely to advance, as farmers will work within their own limits until there is more remuneration for their products.

C. H. Kitchen, Townsend, Norfolk: Girls for housework hard to be got at any price. It would be a good idea to import good girls.

J. W. Overholt, Wainfleet, Welland: Wages will fall on account of low prices and scarcity of money.

R. Fleck, Moore, Lambton: I think wages will likely rise, as the depression appears to be passing away because of the abundant crop of this year.

Thomas Strachan, Grey, Huron: Girls are plenty, so many of our young men having gone to the United States and the North-West.

A. Drummond, Howick, Huron: Very few young men are going to the West now.

N. J. Clark, Usborne, Huron: Wages are not likely to rise, on account of the use of improved machinery and stock-raising being on the increase.

John Douglass, Arran, Bruce: Wages are not likely to rise, thanks to the untiring energy of our agricultural implement manufacturers. If the wages of former years had to be paid, especially in haying and harvesting, the position of the farmer would be anything but pleasant.

James M. Monkman, Arran, Bruce: Wages are likely to fall as farmers are going into the raising of stock, and fewer laborers are required.

Daniel McNaughton, Bruce, Bruce: Domestic servants are scarce, owing to higher wages and easier work in towns and cities.

Wm. Welsh, Huron, Bruce: Wages are likely to fall by reason of all classes being forced to limit expenses, because of small prices for all produce and no appearence of a change.

George Baskin, Artemesia, Grey: Plenty of girls to marry, but not to work in farm houses at milking cows, etc. They prefer to work in villages at dressmaking, and in towns such as Toronto as servants, where they get from $8 to $10 per month.

William Caulfield, Egremont, Grey: I think it would be much better if servants would hire by the year instead of sponging in the winter and asking such high wages in the summer, and grumbling about long hours, as the work or the hours are not what they were 25 years ago for hardship.

James Shearer, Egremont, Grey: The supply of laborers here for the most part has been equal to the demand, but with the increased use of labor-saving implements and more stock raising it is rather in excess of the demand at present. There is a considerable surplus of domestic help here, but the farmers who have to hire find it hard enough to get because they do not like to give more than $3 or $4 per month, while in the cities of Toronto, Hamilton and Guelph they get from $5 to $8 per month.

Robert McCutcheon, Sydenham, Grey: Wages are likely to come down as farmers are using labor-saving machines, and with poor crops and low prices they cannot afford to pay the wages that have been paid; neither can they afford to go on with underdraining or other improvements. Good farm hands are asking $18 per month. If some farm immigrants would come this way they would do well in place of stopping about towns.

J. K. Irving, Innisfil, Simcoe: Domestic servants are very scarce: they can hardly be got for love or money.

George Sneath, Vespra, Simcoe: Wages will undoubtedly fall because, as the lumber buisness decreases through lack of material, laborers are becoming more plentiful, and lower wages will be accepted.

R. A. Brown, West Nissouri, Middlesex: The supply of domestic servants is rather limited, but getting more plentiful, because their wages have doubled in the last four years. They are not yet what they should be in comparison with men's wages, considering the amount of labor preformed. Women's wages must yet come up—the law of supply and demand will make them what they should be.

James G. Pettit, East Oxford, Oxford: I think the rate of wages for good farm laborers who understand the care of stock will keep up to a good figure, on acconnt of a scarcity of that class.

M. W. Schell, East Oxford, Oxford: The rate of wages is likely to fall as a whole; but the wages for competent, reliable men will be fully maintained. Owing to increased facilities for harvesting by machinery, itinerant laborers will not be required to the same extent.

Thomas Lloyd Jones, Burford, Brant: Domestic servants are very scarce, which is a great drawback to our wives, who are nothing better than white slaves, what with raising a family and doing the drudgery of a farm house. This state of things will have a most damaging effect on the rising generation. I believe one-half of the deaths in infancy in the country is from lack of proper care.

Thomas McCrae, Guelph, Wellington: Wages for good men will not likely fall, but for second-rate men they will, I think, be lower.

John H. Lindebury, Clinton, Lincoln: Domestic servants are very independent. If they can't get big wages they wont work.

John Secord, Grantham, Lincoln: I do not think wages can go much lower than they are at present.

J. W. VanDuzer, North Grimsby, Lincoln: Servant girls are scarce, and those we have are getting to be good organ players.

John McPhail, Beverley, Wentworth: Domestic servants scarce, expensive and saucy.

R. Postans, Trafalgar, Halton: The rate of wages should fall, for farmers generally are not making anything, and many are losing money. Prices are very low and likely to remain so, and labor-saving machinery is becoming more abundant.

N. V. Watson, Chinguacousy, Peel: The demand for farm labor is diminishing with the disappearance of the forest, which leaves little or no employment through the winter season.

A. Forster, Markham, York: Farmers are beginning to see that first-class men pay best. If the Government would take some steps to procure the immigration of domestic servants, it would be a great blessing to the country.

D. James, Markham, York: Wages are likely to fall a little, because labor-saving machinery (such as binders, hay-tedders, rock-lifters, horse-forks and hay-loaders) is being more used: on account of low prices farmers are more economical, and hands can afford to take less, as a given sum of money will purchase more of the necessaries of life than it would two years ago.

Wm. H. Findlay, Scarborough, York: There is an over supply of useless men. Good experienced men are always wanted.

M. Jones, Whitchurch, York: There is a lack of domestic servants. The agent convinces a family that an organ is the only thing that affords uninterupted happiness, and when a girl can play "Old Grimes is dead" she is no longer a domestic servant.

S. H. Stevenson, Pickering, Ontario: Domestic servants are very hard to be got. This is one of the greatest obstacles in the way of farming.

Thomas Cain, Scott, Ontario: A binder in the harvest field is equal to four good men.

George Kennedy, Haldimand, Northumberland: The girls have all got above hiring. We cannot get them for love or money.

C. A. Mallory, Percy, Northumberland: We are in greater need of domestic servants than anything else. Our wives are worked too hard, and we cannot get help for them.

Robert Anglin, Pittsburg, Frontenac: Farmers who have to hire nearly all their help cannot make farming pay in this section.

Alexander Ritchie, Storrington, Frontenac: Wages are likely to fall as self-binders are coming into use, as the Canadian Pacific Railway will soon be completed and will throw a number of laborers on the market, as farmers are going more into stock-raising and will not require so many men, and as wages have been too high for the past two years compared with crops and prices of farm produce.

Isaac Wright, Augusta, Grenville: It is thought by many that wages of farm laborers will fall, as many who went West are returning.

Thomas Moulton, Yonge, Leeds: Girls for service are scarce, but for wives they are plenty.

Paul Labrosse, East Hawkesbury, Prescott: Wages are likely to fall on the approach of winter, as is the case every year.

Neil Stewart, Goulbourn, Carleton: As the lumber business is brisk this year I do not think wages will fall.

W. H. Berry, March, Carleton: Domestic servants are very scarce and apparently becoming more so, city life possessing greater attractions than work on the farm.

F. Kosmark, Admaston, Renfrew: Wages are not likely to rise as there is no railroad building in this part now, and lumbering is not very brisk as yet. Self-binders have been introduced in great numbers. In several cases two neighbors own one together. Still more would have been bought if farm produce was bringing a better price.

Peter Anderson, McNab, Renfrew: Servant girls of the right stamp are scarce. It is thought more genteel to earn a precarious living in towns and villages, plying the needle.

William Selkirk, Petewawa, Renfrew: Wages have fallen 20 per cent. since last year. There is not so much demand for men now on the C. P. R., which has left a lot of men out of work.

Reuben Stedman, Drummond, Lanark: Wages are likely to fall because lumbermen are curtailing their operations.

John A. Jackson, Eldon, Victoria: Domestic servants are hard to be got, although their wages are at least 50 per cent. higher than they were half a dozen years ago.

John Fell, sr., Somerville, Victoria: Wages are likely to be lower as lumbering and public works are not in operation to the same extent as usual.

Hugh Collins, Asphodel, Peterborough: The rate of wages may rise on account of the lumber trade being brisk.

Dan. Williams, Glamorgan, Haliburton: Wages will probably fall, as the lumber industry, which controls the rate of wages in this locality, is in a depressed condition.

Wm. J. Casselman, Brunel, Muskoka: I think wages are likely to fall, as the railroad through this district is about finished, and I don't hear of much lumbering going on.

A Wiancko, Morrison, Muskoka: Wages are higher here than in the older parts of the Province. The lumbering industry absorbs all willing hands. There would be more done in clearing land if it was not for the high wages.

URBAN LABOR, WAGES AND COST OF LIVING.

In towns and cities which are the seats of large industries it is found that statistics of labor and wages may be collected economically from the two classes concerned in them. A canvass of employers as well as of employes is practicable without waste of time on the collectors' part, and at a moderate cost. Information gained from one source only may be prejudiced to some extent, or, at any rate, prejudice may be suspected where there are opposing interests: the employer may give the highest rate of wages in the hope of inducing competition for labor, while the employe may give the lowest rate with the view of discouraging competition Hence the importance of seeking information at the two sources, and presenting both, each one as the corrective of the other. But of course this is only possible within certain limits. The number of a workman's dependents, for example, or how much he pays for rent, food, clothing, fuel and other items in the cost of living, are best known to himself, and upon himself alone we must depend for information concerning them. His rate of wages—whether it be by the day, week, month or year, or by piece-work—is as well known to his employer as to himself, and in the matter of this rate returns gathered from the two parties should give statistics of reasonable, if not absolute, accuracy. But it is obvious that those returns, to be of real value, should not be collected by the same person. They might be obtained in good faith from employer and employe, but it is more probable that the one would be merely a duplicate of the other, and lean to one side or the other according as the collector possessed the confidence

of one or other of the parties. The plan pursued was to send out an officer of the Bureau to collect statistics from employers in the various towns and cities, and to engage local agents to canvass the employes. * In this way statistics of weekly wages were collected in twenty-six towns and cities of the Province, viz.: Almonte, Belleville, Brantford, Brockville, Carleton Place, Chatham, Cornwall, Galt, Gananoque, Guelph, Hamilton, Hespeler, Kingston, London, Merritton, Oshawa, Ottawa, Paris, Peterborough, St. Catharines, St. Thomas, Stratford, Thorold, Toronto, Walkerville and Windsor.

Table XXXV presents by industries the totals of returns collected from the employers of labor for the April and October weeks, of which the following is a summary, compared with similar returns for 1884:

	April —1885— October.		April —1884— October.	
No. of returns	496	494	416	416
Male workers	15,148	15,240	16,803	16,384
Female workers	3,119	3,095	2,799	3,027
Workers over 16	16,544	16,678	17,666	17,435
Workers under 16	1,723	1,657	1,936	1,976
Amount of earnings	$142,529.60	$143,531.61	$154,867.43	$151,603.79

The number of industries represented last year was 62, against 56 in the previous year, not including those under the head of "Miscellaneous," which embraced all single returns of classes. In 1884, however, the average number of employes in an establishment was 47, against an average of 37 in 1885.

The statistics of the joint returns of employers and employes are compiled in Table XXXVI, showing the average rate of weekly wages by occupations and sub-occupations in April and October and the average of both weeks. The number of workers represented by the returns of each month, classified as male and female over and under 16 years of age, was as follows:

Month.	No. of returns by—	Males.		Females.		Total.
		Over 16.	Under 16.	Over 16.	Under 16.	
April	Employers	13,147	1,134	2,840	226	17,347
	Employes	2,280	64	347	16	2,707
	Total	15,427	1,198	3,187	242	20,054
October	Employers	13,552	1,215	2,876	213	17,856
	Employes	2,384	65	345	17	2,811
	Total	15,936	1,280	3,221	230	20,667

* Following is a copy of the schedule used by local agents for the collection of weekly wages:

"The statistics of this return are accepted in confidence. They are not available for taxation, or for any purpose excepting tabulation by totals and averages in the annual report of the Bureau of Industries.

A. BLUE, *Secretary.*

Toronto, November 2nd, 1885.

SCHEDULE A.

LABOR STATISTICS FOR THE (TOWN OR CITY) OF FOR THE WEEKS ENDING APRIL AND OCTOBER, 85

1. Name .....
2. Over or under 16 years .....
3. Occupation .....
4. Where employed .....
5. Amount of wages for week ending April 25th, - - - - $.....
6. Amount of wages for week ending October 31st, - - - $.....
7. Number of hours employed in week ending April 25th, - - .....
8. Number of hours employed in week ending October 31st, - - .....

Certified,

.....

Collector of Statistics.

NOTE.—The amount of wages is for the last full week of April and October."

The return from employers was collected under the same heads, with this exception, that employes were grouped by occupations.

Where the preponderance of returns is so largely on the side of the employers the general average must necessarily incline to the average computed from their figures. The following analysis shows what it is in hours and earnings computed from the two sources of returns respectively, together with the averages for 1884 and 1885 :

Classes of workers.	April week.			October week.			Average for both weeks.		
	Wages.	Hours employed.	Wages per hour.	Wages.	Hours employed.	Wages per hours.	Wages.	Hours employed.	Wages per hour.
Males over 16 from—	$ c.		cts.	$ c.		cts.	$ c.		cts.
Employers	9 12	59.49	15.34	9 13	59.63	15.31	9 13	59.56	15.33
Employes	8 92	58.65	15.21	9 00	58.72	15.32	8 96	58.68	15.27
Average	9 09	59.37	15.31	9 11	59.50	15.31	9 10	59.43	15.31
Males under 16 from—									
Employers	2 82	48.75	5.79	2 93	49.84	5.87	2 88	49.31	5.84
Employes	2 86	61.88	4.62	2 86	61.43	4.69	2 87	61.65	4.66
Average	2 82	49.45	5.70	2 93	50.43	5.81	2 88	49.95	5.76
Females over 16 from—									
Employers	4 35	58.58	7.43	4 37	58.74	7.44	4 36	58.66	7.43
Employes	4 25	59.32	7.16	4 26	59.06	7.21	4 25	59.19	7.18
Average	4 34	58.66	7.40	4 36	58.77	7.42	4 35	58.72	7.41
Females under 16 from—									
Employers	2 56	57.46	4.46	2 50	56.20	4.45	2 53	56.85	4.45
Employes	2 88	60.37	4.77	2 79	57.65	4.84	2 83	58.97	4.80
Average	2 58	57.66	4.47	2 52	56.31	4.48	2 55	57.00	4.47
All classes from—									
Employers ... (1885	7 85	58.61	13.39	7 87	58.78	13.39	7 86	58.70	13.39
Employers ... (1884	7 90	57.00	13.86	7 81	55.54	14.06	7 85	56.27	13.95
Employes .... (1885	8 14	58.82	13.84	8 23	58.82	13.99	8 19	58.82	13.92
Employes .... (1884	8 35	57.92	14.42	8 14	57.17	14.24	8 24	57.55	14.32
Average.. (1885	7 89	58.64	13.45	7 92	58.79	13.47	7 90	58.71	13.46
Average.. (1884	7 96	57.12	13.93	7 85	55.74	14.08	7 90	56.44	14.01

In the case of males over 16 years of age, which constitute 77 per cent. of the total number of workers, the average earnings per week are 17 cents less by employes than by employers' returns ; but as the time of work is also .88 of an hour less the actual difference is only .06 of a cent per hour, or about $3\frac{1}{2}$ cents per week. In the case of females over 16, the wages according to employers is 11 cents per week more than according to employes, while the time is shorter by .53 of an hour and the rate of wages per hour is higher by a quarter of a cent. These results are so close that no reasonable doubt can exist as to the general accuracy of the returns obtained from both sources. The differences in the average wages of males and females under 16 years are more marked, but owing to the few returns received from workers of this class they can scarcely be accepted for the computation of averages. Taking all classes, the average weekly wages by the returns of employers is $7.86, or 13.39 cents per hour, while by the returns of employes it is $8.19 per week, or 13.92 cents per hour—the difference in length of time per week being only .12 of an hour. Comparing the rate of wages per week for all classes in 1884 and 1885, it will be observed that it is exactly the same in both years, $7.90 ; but

as the time is 2.27 hours longer in 1885, the rate per hour is .55 of a cent lower. A comparison of a few of the principal occupations is presented in the following table:

Occupations.		April week.			October week.			Average of the two weeks.		
		Wages.	Hours.	Wages per hour.	Wages.	Hours.	Wages per hour.	Wages.	Hours.	Wages per hour.
		$ c.		cts.	$ c.		cts.	$ c.		cts.
Blacksmith	1885	9 86	59.32	16.62	9 74	59.15	16.46	9 80	59.24	16.54
	1884	9 42	58.33	16.16	9 76	58.21	17.05	9 58	58.27	16.44
Carpenter and woodworker	1885	9 89	59.11	16.73	9 97	58.98	16.90	9 93	59.05	16.82
	1884	9 72	59.10	16.44	9 98	59.07	16.90	9 85	59.08	16.67
Machinist	1885	10 15	59.16	17.15	10 16	59.14	17.18	10 15	59.15	17.17
	1884	9 85	59.31	16.61	10 08	59.17	17.03	9 96	59.25	16.81
Moulder	1885	11 60	59.31	19.56	11 76	59.15	19.90	11 69	59.22	19.74
	1884	11 61	58.86	19.74	11 55	58.75	19.66	11 58	58.80	19.70
Painter	1885	9 61	58.53	16.42	9 54	57.29	16.65	9 58	57.97	16.52
	1884	9 44	58.70	16.08	9 72	59.19	16.42	9 58	58.94	16.25
Average of the five trades	1885	10 19	59.12	17.23	10 26	58.94	17.41	10 22	59.03	17.32
	1884	10 10	58.99	17.11	10 30	58.95	17.47	10 19	58.98	17.28

For these five trades the average wage per week is three cents higher in 1885 than in 1884, and the average of time only three minutes longer. The statistics are compiled from returns made by employers and employes for both years.

Of 440 occupations reported in Table XXXVI the weekly wages of 252 were over the average of $7.90 and those of 188 were under it.

Males over 16 years were engaged in 326 occupations at an average of $9.10 per week, of whom the earnings in 173 were over that average and in 153 under it.

Males under 16 years in 25 occupations averaged $2.88 per week, of whom those in 20 were over and in 5 were under it.

Females over 16 years in 79 occupations averaged $4.35 per week, those in 25 being over and those in 54 under that figure.

Females under 16 years in 10 occupations averaged $2.55 per week, in 6 of which the earnings were more and in 4 less than the average.

Hotel employes and servants with board are not included in this summary.

The statistics in Tables XXXVIII to XLII are compiled from schedules filled up by and collected from workers only,* and they show by occupations the time employed, wages earned and cost of living for the year ending 31st October, 1885, in the following towns

* Following is a copy of the schedule used by local agents of the Bureau in the collection of yearly statistics:

"The statistics of this return are accepted in confidence. They are not available for taxation, or for any purpose excepting tabulation by totals and averages in the annual report of the Bureau of Industries.

A. BLUE, *Secretary.*

Toronto, November 2nd, 1885.

SCHEDULE B.

Labor Statistics for the (Town or City) of for the year beginning 1st November, 1884, and ending 31st October, 1885.

1. Name.....
2. Over or under 16 years.....
3. Occupation.....
4. Where employed.....
5. Number dependent for support (not including workingman),.....

and cities, viz: Almonte, Belleville, Brantford, Brockville, Chatham, Cornwall, Galt, Gananoque, Guelph, Hamilton, Hespeler, Kingston, London, Oshawa, Ottawa, Peterborough, Stratford, St. Thomas and Toronto. Returns available for tabulation were received from 2637 workers, representing 26 industries and 269 occupations. One hundred and sixteen others were defective, owing to the omission of one or more essential items in filling up the schedule.

The statistics of 1884 gave earnings and cost of living for 2,835 workpeople, representing 204 occupations in nineteen towns and cities. Compared with the statistics of 1885 the averages of dependents, time employed, wages earned and cost of living, together with the number of occupations whose averages are greater or less than the general average, are shown in the following table:

Average of	1885.	1884.	No. of occupations over and under the average.			
			—Over-1885-	-Under—	—Over-1884-	Under—
Dependents	3.54	3.34	31	215	25	151
Hours per week	58.85	59.10	148	121	109	95
Days per year	271.28	265.17	160	109	131	73
Total earnings $	388.85	383.31	141	128	126	78
Cost of living $	332.50	334.47	143	126	124	80

In 54 occupations 1,032 workers had no dependents in 1885, against 994 workers in 28 occupations who had no dependents in 1884. In 215 occupations 1,605 workers in 1885 had an average of 3.54 dependents, against 1,859 workers in 176 occupations with an average of 3.34 dependents in 1884. In 1884 the total number of dependents was 6,212, while in 1885 it was 5,682, of whom 3,633 were under 16 years of age—the average of the latter being 2.26 per worker, against 3.54 of all ages. In 112 occupations the average time employed per week is 60 hours and over; in 85 it is 60 to 65 hours; in 9 it is over 65 to 70 hours; in 11 it is over 70 to 75 hours; and in 7 it is over 75 hours. Hotel bell-boys have an average of 76 hours, and bar-tenders 80.17; railway baggagemen 78 hours, signalmen 79.33 and engineers 79.83; street car drivers 83.40 hours, and sailors 84 hours. In 75 occupations the average number of days employed was 300 and upwards, against 43 occupations the previous year; and of those who work 313 days and upwards the principal are hotel, brewery and railway employes, telegraph operators, lamplighters and caretakers. In 40 occupations the average time is less than 250 days; in 22 it is less than 225, and in 11 it is less than 200 days.

6. Number of dependents under 16 years of age, - - - - - .....
7. Hours employed per week, - - - - - - - - - .....
8. Days employed during the year, - - - - - - - - - .....
9. Wages derived from occupation during the year, - - - - $.....
10. Extra earnings (if any) received during the year outside of regular occupation, - - - - - - - - - - - $.....
11. Earnings (if any) of wife or minor children during the year, - $.....

Cost of Living.

12. Cost of rent for the year, - - - - - - - - - $.....
13. Cost of fuel for the year, - - - - - - - - - $.....
14. Cost of clothing for family (or self if without dependents) for the year, - - - - - - - - - - - - $.....
15. Cost of food for family for the year, - - - - - - - $.....
16. Total cost of Living for family (or self if without dependents) for the year - - - - - - - - - - - - $.....

Certified,

.....

Collector of Statistics.

Note.—The details under Cost of Living may be given in whole or part according as the person making the return is able to classify them. Minute accuracy is not possible, unless accounts are kept, but a close approximation can doubtless be made. Item No. 16 is of the greatest importance, for without it the return is useless in making up the Tables."

The totals and averages of earnings and cost of living of workers classified as persons with and without dependents were as follows in the two years:

	Without dependents.		With dependents.		Totals.	
	1885.	1884.	1885.	1884.	1885.	1884.
No. of workers	1,032	994	1,605	1,859	2,637	2,853
Total earnings $	306,976	292,440	718,404	801,137	1,025,380	1,093,577
Average do $	297.46	294.20	447.60	430.95	388.85	383.31
Total cost of living $	232,927	228,731	643,884	725,523	876,811	954,254
Average do $	225.71	230.11	401.17	390.28	332.50	334.47

The aggregate of days' labor was 756,523 in 1884 and 715,374 in 1885. The total earnings include $12,337 of extra earnings by employes in 62 occupations in 1884, and $17,710 in 103 occupations in 1885; together with $19,094 of wives' and children's earnings in 70 occupations in 1884, and $24,132 in 85 occupations in 1885. Less these earnings the average wages of workers without dependents was $372.29 in 1884 and $372.98 in 1885, or $40.48 in excess of the cost of living in the latter year, and $37.82 in the former. Comparing the earnings from all sources with the cost of living, the surplus or deficit of the several classes of workers with and without dependents was as shown in the following table:

	Males over 16.		Males under 16.		Females over 16.		Females under 16.	
	1885.	1884.	1885.	1884.	1885.	1884.	1885.	1884.
Workers with dependents—								
Earnings $	452.25	436.29	.....	.....	195.03	210.61	.....	.....
Cost of living $	405.08	394.29	.....	.....	189.07	224.86	.....	.....
Surplus or deficit (+ or –) $	47.17	42.00	.....	.....	5.96	-14.25	.....	.....
Workers without dependents—								
Earnings $	353.32	334.12	129.95	133.54	182.43	177.82	126.82	97.15
Cost of living $	259.92	252.27	121.82	138.91	155.90	166.34	117.64	107.92
Surplus or deficit $	93.40	81.84	8.13	-5.37	26.53	11.48	9.18	-10.77
Workers of both classes—								
Earnings $	421.26	406.42	.....	.....	183.82	183.28	.....	.....
Cost of living $	359.60	352.76	.....	.....	159.55	176.09	.....	.....
Surplus or deficit $	61.66	53.66	.....	.....	24.27	7.19	.....	.....

In the following table is presented a comparison of time, earnings and cost of living in the five principal occupations taken for comparison of weekly wages for the years 1884 and 1885 :

Occupations.		No. of dependents.	No. of dependents under 16.	Hours employed per week.	Days employed in year.	Yearly wages from occupation.	Extra earnings.	Wife and minor children's earnings.	Total earnings.	Total cost of living.
Blacksmith	1885	2.58	1.67	59.05	272.77	418.42	4.13	16.28	438.83	368.43
	1884	2.35	.....	58.19	269.54	428.32	2.91	6.36	437.59	376.02
Carpenter	1885	2.98	1.95	57.47	262.05	424.01	6.42	9.55	439.98	379.11
	1884	3.15	.....	57.78	256.28	409.34	3.37	14.43	427.14	376.34
Machinist	1885	2.62	1.78	58.02	264.67	452.97	4.29	9.68	466.94	383.50
	1884	2.84	.....	58.63	255.26	417.22	6.25	6.01	429.48	381.32
Moulder	1885	2.84	1.89	57.61	244.90	473.51	3.40	3.86	480.87	411.99
	1884	2.40	.....	57.61	249.54	434.92	2.34	3.95	441.21	393.27
Painter	1885	2.53	1.57	58.43	256.99	410.31	6.05	7.67	424.03	369.31
	1884	2.75	.....	58.10	252.12	399.36	12.52	5.11	416.99	367.75
Average for the five trades	1885	2.77	1.82	57.99	260.63	436.03	5.11	9.32	450.46	382.88
	1885	2.77	.....	58.04	256.10	416.89	5.01	8.32	430.22	378.76

In this table are included all workers of the several occupations in such industries as agricultural implements, boiler and engine works, carriage works, general foundries, stove foundries, lock factories, railway shops and sewing machine factories ; consequently the averages are computed from a large number of returns. The differences are not wide in any of the trades, comparing one year with another ; and for the five trades they are in favor of 1885 by four and a half days in time and $20.24 in earnings, with an increase of $4.12 in the cost of living.

Table XL shows the earnings and cost of living in each of the nineteen towns and cities from which returns were obtained. Table XLII exhibits the averages of time, wages and cost of living of those whose earnings were more than, equal to, and less than the cost of living, classed as workers with dependents and without dependents. The following tables show the general results of this analysis, compared with the statistics for 1884 :

I.—EARNINGS GREATER THAN COST OF LIVING.

	With dependents.		Without dependents.		Total.	
	1885.	1884.	1885.	1884.	1885.	1884.
Number of workers	950	794	671	548	1621	1,342
Average of—						
Days employed	278.53	280.37	279.15	275.77	278.79	278.49
Earnings $	493.21	510.95	345.03	373.32	431.87	454.75
Cost of living $	400.14	398.70	231.91	251.88	330.50	338.75
Surplus $	93.07	112.25	113.12	121.44	101.37	116.00

II.—EARNINGS EQUAL TO COST OF LIVING.

	With dependents.		Without dependents.		Total.	
	1885.	1884.	1885.	1884.	1885.	1884.
Number of workers	410	884	300	381	710	1,265
Average of—						
Days employed	267.14	258.78	277.99	265.47	271.72	260.80
Earnings $	396.59	385.85	218.87	205.40	321.50	331.50
Cost of living $	396.59	385.85	218.87	205.40	321.50	331.50

III.—EARNINGS LESS THAN COST OF LIVING.

Number of workers	245	181	61	65	306	246
Average of—						
Days employed	233.61	209.64	218.11	229.82	230.52	214.97
Earnings $	356.12	300.25	160.67	147.79	317.16	259.96
Cost of living $	412.86	374.88	191.10	191.48	368.66	326.42
Deficit $	56.74	74.63	30.43	43.69	51.50	66.46

In the first class the number of days employed was almost exactly the same in both years, with a decrease of $22.88 in earnings, $8.25 in the cost of living and $14.63 in the surplus. In the second class the time employed shows an increase of almost 11 days, with a decrease of $10 in earnings and the cost of living. In the third class the time in 1885 was greater than in 1884 by 15.55 days and the earnings by $57.20; and though the cost of living increased by $42.24, the deficit of $51.50 is $14.96 less than in 1884. For both years the time employed is longest for the class having a surplus, and shortest for the class having a deficit—the difference being 48¼ days. The daily average rate of wages is also highest for workers having a surplus, as appears by the following table:

	First class.		Second class.		Third class.	
	1885.	1884.	1885.	1884.	1885.	1884.
Daily wages for workers—						
With dependents $	1.76⅔	1.82	1.48½	1.50	1.52	1.30
Without dependents $	1.23⅝	1.35⅓	78⅝	77⅓	73⅝	64⅓
With and without do $	1.55	1.63	1.18½	1.27	1.37½	1.21

In 1884 there was a marked uniformity in the shortened time and lowered wages from the first class to the second, and from the second to the third; which also is true of the statistics of 1885, with the exception of the rate of wages for workers with dependents in the third class. The high average of the cost of living for this class ($412.86), together with the high average of daily wages ($1.52) would indicate that a large proportion were workers of first rate rank, whose short time was due to some special circumstance—possibly a strike. Had they been employed the same number of days as workers with dependents in the first class, earnings at $1.52 per day would have exceeded cost of living by $10.50, instead of falling short by $56.74; while, on the other hand, had workers with dependents in the first class been employed the same number of days as those in the third, their earnings at $1.76⅔ per day would have exceeded cost of living by only $12.57, instead of $93.07. Thus it appears that with men in the general mass, time and the rate of wages are the essential data in working out the problem of a livelihood: a surplus or a

deficit depends on the margin of a few days in the time employed, or of a few cents in the rate of daily wages earned.

Table XLII shows that out of the 2,637 workers who gave returns of earnings and cost of living for the year, 710 came out even: they made a subsistence only; they were alive at the end of the year, with such bodily gain and mental progress as was possible under their circumstances. The number whose earnings exceeded cost of living was 1,621, and the number whose cost of living exceeded earnings was 306. Of the former, the average surplus of 810 workers ranged from the minimum to $50, of 410 from $50 to $100, and of 401 from $100 upwards; whereas of the latter, the average deficit of 203 ranged from the minimum to $50, of 67 from $50 to $100, and of 36 from $100 to $300.

The chief items in the cost of living are rent, fuel, clothing and food, and workmen were asked to give these in detail, as in schedule B. There is a considerable diversity in the averages of these items for the several towns and cities, as will be seen by reference to Table XL; but it must be borne in mind that the inquiry was made for the first time, and that exact figures cannot be given excepting by persons who keep expense accounts. The general averages for the nineteen towns and cities from which returns have been collected appear to be fair and moderate enough. Rent at $74.41 a year is only $6.20 a month, fuel at $40.53 is only the price of six tons of coal, and clothing at $19.03 per capita cannot be extravagant for a family one-half of whose members are over 16 years of age.* The average cost of food per capita, as ascertained from the returns, is $47.67, or $216.42 for an average family. A fair test of the accuracy of this average appears to be supplied by the statistics in Table XLIII, which gives in detail the quantity and value of food consumed at certain public institutions in the Province for a period of two weeks in February of this year. These institutions are the following:

I. Schools and Colleges: Agricultural College, Guelph; School for the Blind, Brantford; School for the Deaf and Dumb, Belleville; Presbyterian Ladies' College, Ottawa; Baptist College, Toronto.

II. Provincial Prisons: Penitentiary, Kingston; Reformatory for Boys, Penetanguishene; Central Prison and Mercer Reformatory, Toronto.

III. Lunatic Asylums: The Provincial institutions in Toronto, Hamilton, London and Kingston.

The reports for each of these institutions appear to have been prepared with the greatest possible care by responsible officers; and in addition to quantities and values a register was kept of each meal, showing the number of persons at each, graded by ages, and the kinds of food supplied. Following is a description of persons and rations in the three classes of institutions:

Institutions.	No.	No. of meals supplied to persons—				Total meals.	Total No. of rations.†
		Under 5 years.	5 to 10 years.	10 to 15 years.	Over 15 years.		
Schools and colleges	5	42	2,478	6,992	17,123	26,635	8,878
Provincial prisons	4	42	1,092	4,641	52,208	57,983	19,328
Lunatic asylums.....	4	418	434	168	131,198	132,218	44,073
Totals.....	13	502	4,004	11,801	200,529	216,836	72,279

* For the 1,605 persons with dependents in Table XLI the average number in a family is 4.54, of whom 2.28 are over and 2.26 are under 16 years of age. To clothe such a family at all adequately for a year with $86.39 must test the resources of ingenuity and economy.

† A ration is the daily allowance of food to one person, and is taken in this Table as the equivalent of three meals.

From the food consumed in two weeks by 5,163 persons of various ages, as shown in this description, the following averages of the quantity and value of a daily ration are computed for the several classes of institutions:

Classes of food.	Schools and colleges.		Provincial prisons.		Lunatic asylums.		All classes.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	lbs.	cts.	lbs.	cts.	lbs.	cts.	lbs.	cts.
Animal albuminoids	1.815	9.722	0.855	4.295	1.234	6.181	1.204	6.111
Vegetable albuminoids..	.984	2.287	1.950	3.361	1.156	2.740	1.347	2.850
Starchy foods	1.789	3.215	1.344	1.740	1.671	2.626	1.597	2.461
Miscellaneous	.021	0.953	0.014	0.374	0.028	1.008	0.024	0.832
Totals.....	4.609	16.177	4.163	9.770	4.089	12.555	4.172	12.254

These large institutions are enabled to purchase supplies at more favorable rates than private families can procure them, and, as a rule, waste of food is minimized where there are many consumers. Yet, at the average cost of food supplies for all institutions, the cost per capita for a year is $44.72, or only $2.95 less than the average in Table XLI, computed from returns made by workmen. At the prison rate the annual cost per capita would be $35.66; at the asylum rate it would be $45.82; and at the school and college rate it would be $59.04. These figures are possibly a little high for the average of a whole year, since they represent the food consumption of one of the coldest months in the year, when the greatest quantity of food is required to maintain animal heat; and in order to get a true average for the year it will be necessary to get reports from the same institutions for one of the summer months. But although it is then shown that the average is somewhat lower, the fact remains that the highest economy in food supplies is attainable where large quantities are purchased and prepared for the table, and it does not seem probable that the average of $47.67 for the yearly cost per capita of food for a workingman's family will be successfully challenged. At the same time it would be rash to assume from such limited data, and from the returns of one year, that the figure is an economic fact which time or circumstance cannot alter or affect.

RELATIONS OF WAGE-EARNERS TO EMPLOYERS AND EMPLOYMENT.

With the view of ascertaining the relations of wage-workers to employers and employment, how far means are provided for their health and safety, and what opportunities are afforded for social culture and mental improvement, the collectors of the Bureau were given the following subjects for enquiry and report in the several towns and cities while employed in gathering the statistics of labor and wages:

1. Payment of Wages.—(1.) Is there a fixed pay-day for wages of workers? and what day? (2.) How many pay-days in each month? (3.) Is the full amount of workers' wages paid per day? (4.) What proportion, if any, is reserved by the employer? and for what object is it reserved? (5.) Are wages as a rule paid in cash?

2. Accidents to Workers.—(1.) Are any accidents reported for the year? (2.) How many? and what has been the nature of each? (3.) How many have resulted fatally? how many resulted in permanent injury? and to what cause were they due in each case? (4.) Is machinery so protected as to prevent accidents, with reasonable care on the part of the workers?

3. Industrial Strikes.—(1.) Have any strikes occurred during the year? and if so, what trades have been affected by them? (2.) What was the cause of the strikes? and if settled, upon what terms? (3.) How many workers were affected in each strike? how long were they out of employment? and what amount of earnings was lost in consequence of the strike?

4. Health and Safety of Workers.—(1.) What is the general condition of the health of workers? and how in this respect do in-door and out-door workers compare? (2.) Has any epidemic or contagious disease broken out in the families of workers? and if so, to what is its origin ascribed? (3.) Is there a proper

ventilation of workshops or factories? (4.) Are wash-rooms and water-closets provided for the convenience of workers? and separate ones for each sex? Are they kept in a proper state of cleanliness? (5.) Is the water supply ample, and of a good quality for drinking? (6.) Are adequate means of escape provided in case of an outbreak of fire? (7.) Are the doors of factories or shops locked or bolted during working hours?

5. Running Time of Shops and Factories.—Have factories or shops been idle for any part of the year? and if so, how long and for what cause? (2.) Have workers been idle for any cause except the closing of factories or shops, or (in the case of out-door trades) the state of the weather? Have they been able as a rule to find steady employment? (3.) Is it the custom to keep factories, shops, etc., open the same number of hours for each day of the week? If any portion of Saturday is given to workers, how much? and are the full day's wages allowed?

6. Reading Rooms and Libraries.—(1.) Are reading rooms or libraries maintained in connection with any trade or occupation, or in any factory or workshop? (2.) How have they been established? how are they supported? and how are they patronized by workers? (3.) Give particulars as to each library or reading room—The number of volumes, periodicals and newspapers—When and how established and how maintained—Interest taken in them by employers and workers, etc.

1. Although the report in a few cases is that "there is no fixed pay-day," most establishments of any considerable size have regular days for paying their hands. Operatives are usually paid weekly or fortnightly, though in some establishments, including most railway shops and some of the cotton mills, wages are paid monthly. In the case of weekly or fortnightly payments the favorite pay-day appears to be Friday or Saturday, though there are exceptions, chiefly in favor of Monday. As a rule the full amount of wages due the workman is not paid on pay-day; an amount varying from one day's to one month's pay being retained in the employer's hands, usually for the time the workman remains in his employ. The reason assigned is generally said to be convenience in banking and keeping the accounts, but in some cases the amount appears to be reserved to secure notice from the employes in case of quitting work. One correspondent states that it is done "to draw interest on the men's money." Piece-work hands cannot, of course, from the nature of their employment, be paid with the same regularity as those working on time, and the rule in their case appears to be to pay them for all work which has undergone inspection up to, or within a certain time of pay-day. Hands are almost universally paid in cash, and only one or two small and debilitated concerns resort to the old-fashioned and unsatisfactory method of paying their employes by orders on stores. One establishment is reported as paying its men occasionally in a certain quantity of the goods they make, but this system of combining the functions of workmen and salesmen does not appear to give such unmixed satisfaction as to be likely to bring about its general adoption. Some large manufacturing establishments rent tenements to a certain number of their operatives, the rent being deducted from their wages.

2. Though a considerable number of accidents are reported, the great majority of them did not involve fatal or permanent injury, consisting chiefly of burns from molten metal, bruises, cuts by buzz-saws, planers, etc. Railway hands appear to be the chief sufferers from the more serious kinds of accidents. From St. Thomas four are reported on the Grand Trunk railway from coupling cars, one of which resulted fatally; one while stringing a bell cord, and one from the breaking of a whistle pipe in a locomotive cab. The correspondent reports that "defective construction is claimed by workers to be the cause of the above accidents." Two are reported on the Canada Southern railway by falling from engines, owing, it is said, to defective oilers; two while coupling cars, owing to defective couplers, and two in the shops of the same road, where, however, "with few exceptions the machinery is well protected." In none of these accidents were the victims fatally or permanently injured. A fatal accident occurred at London to one who is described as a "green boy from the old-country," by falling down an open elevator shaft, and another at Kingston by a stick of timber falling on a man while pulling down an old house. Machinery is generally reported to be sufficiently protected to prevent accidents with reasonable care on the part of the workers, but there are exceptions. An accident resulting in the death of a little girl took place in a Brantford factory. She was caught in an unprotected wire rope that ran through the floor of the workroom and drove part of the machinery. After the accident this rope was properly guarded. One correspondent reports that grist mill machinery is not well protected: that many gears, belts and pulleys running at a high rate of speed are left uncovered; and he mentions one accident due to this cause, in which a mill-wright was caught

by the beard and severely injured. The Hamilton correspondent, writing of the machinery in planing mills and box factories, says "it should be more protected, but many accidents would have been prevented had more caution been used." The Hespeler correspondent, in writing of some minor accidents, says "they can, and indeed must, be attributed to the carelessness of the persons injured." He and a large number of other correspondents report machinery to be sufficiently protected. The Belleville correspondent reports that "in most cases engines are run by young and incompetent hands."

3. Generally speaking, the relations between workers and employers seem to be most satisfactory. The strikes reported are few in number, and most of them appear to have been amicably settled in their incipiency. The Hamilton correspondent says that a strike which lasted less than half a day occurred in one of the shoe factories of that city. It arose upon a misinterpretation of Union regulations, and was settled upon a satisfactory explanation being given; 145 male and female workers were affected by the strike. Five moulders struck in one of the agricultural implement establishments at Oshawa, on account of notice of reduction of wages. The notice was withdrawn after six weeks time and about $350 in earnings had been lost. The moulders in a Belleville stove foundry struck, but finally accepted a small reduction in the price of piece-work and work was resumed. Two strikes took place in Toronto during the year, one by the Builders Laborers' Union, and one by the Plasterers' Union. The first, which lasted for five weeks, was for an increase of wages, and was settled by arbitration. It affected from 500 at the start to 250 at the time of settlement, and the loss in wages was about $16,000. The plasterers' strike was against the grading down system, which, the report states, was successfully resisted. The number of men affected or the loss in wages is not reported.

4. The general condition of the health of workers appears to be good, the average for out-door employes being, on the whole, considerably better than for in-door hands, though in the case of some in-door occupations, such, for example, as wood-working, the difference is scarcely perceptible. One report states that female employes are subject to "fainting and spasms, apparently through being obliged to work in a standing position in many places." Factories and workshops appear to be, as a rule, fairly well ventilated, especially those erected within the last few years, the exceptions being usually found in the larger city establishments. The Hamilton correspondent, writing of stove factories, says that the "the ventilation in a number of shops is very imperfect, particularly the casting cleaning rooms." He says further: "In the shoe factories, as a rule, no effort is made on the part of the proprietors to secure pure fresh air, and numerous complaints have been made by the workers in these factories of the foul smells." Another, writing from London respecting the tailoring and dressmaking trades, says: "There is no proper ventilation. A dozen girls are stuck in a room 12 x 14; no washrooms or closets attached to any of them that I could hear of." Water-closets are provided for the convenience of workers with the single exception above noted, and where both sexes are employed separate ones are provided for each sex. But in the great majority of cases they are reported to be kept "in a very filthy condition," though this particular evil is in some cases ascribed to the carelessness of the workers themselves. There is no doubt, however, that a little well-directed supervision is much needed in this direction, and that it would do much to mitigate what is evidently a very common sanitary defect. In some few cases wash-rooms are provided for workers, and in nearly all an abundant supply of excellent water is available for their use. The report from Oshawa states that isolated cases of diphtheria have occurred amongst the families of workers, "ascribed to impure water owing to the proximity of privies. The water supply is from wells, the water as a rule being good, unless contaminated as referred to." The means provided for escape in case of fire in large factories do not appear to be very generally satisfactory. The correspondent in Hamilton, reporting with reference to an industry carried on in very large buildings and employing a large number of hands, says that no direct means of escape are provided in the event of fire, other than those used on all occasions for exit, and they would be insufficient in case of fire. The correspondent at St. Thomas, replying to the question as to the adequacy of the means of escape in case of fire, replies; "No; the doors nearly all swing in, and in upper floors there are no fire escapes." Another,

writing from Guelph, says: "The factories are very badly arranged in this respect, there being little or no provision made for fire." The question, Are the doors of factories or shops locked or bolted during working hours? is generally answered in the negative, but in one or two large factories the opposite practice appears to prevail.

5. As a general rule factories and shops were kept running the whole year, barring the usual periods necessary for stock-taking, repairs, and other purposes incidental to trade. In some lines of manufacture, however, and particularly foundry and machine shops, agricultural works, edge tool factories and sewing machine factories, over production or reduced demand for certain classes of goods necessitated a curtailment of output in some shops, either by way of closing down for a few months, working on three-quarters or other fractional time, or working with a decreased number of hands. These, however, are reported to be exceptional cases, and accordingly workers as a rule have been able to find steady employment. It appears to be a pretty general custom for employes to work from one to five hours less on Saturdays than upon other days of the week. In most cases they either lose their wages proportionately or make up the lost time during the week, but in Peterborough, Guelph, and probably some other towns, an hour is allowed on Saturdays without any deduction from the weekly wages.

6. The last topic in the schedule was with reference to whether reading rooms or libraries were maintained in connection with any trade or occupation, or in any factory or workshop, and it is to be regretted that the replies under this head are rather monotonously in the negative. The following are the exceptions reported:

The St. Thomas correspondent writes:

The Railway branch of the Y. M. C. A. have a good reading room and library, organized in 1882. The reading room is 18x50 feet; library, 16x22; office, 14x20; committee room, 20x30; bath room, two tubs, water closet, urinal and toilet and washroom. It is supported by a membership fee of $2 and contributions of from $3 to $25. It has 900 volumes, worth $1,000; an organ given by the Canada Southern railway men (officers?), and piano by Mr. Vanderbilt. The reading matter on the tables costs $70 per year.

The Brantford correspondent writes:

The only library in connection with any of the establishments here is at the Grand Trunk works, where also is a reading room in which the leading newspapers may be seen on the tables. It is managed by the men and is well sustained.

The Hamilton correspondent says:

There is a library in connection with the Grand Trunk railway shops but it has not been in use for some years. It was established by donations, proceeds of picnics, entertainments, etc., and supported by contributions when in working order.

The Kingston correspondent writes:

There is no library or reading room except in connection with the Kingston and Pembroke railway. It was established by the employes and supported by them with a small grant from the company each year. It is largely patronized by the employes.

The Guelph correspondent says:

There are no reading rooms in connection with any factory, but we have a free library and reading room, maintained by the city, which is well patronized.

The Belleville correspondent writes:

The only public reading room in the city is the Mechanics' Institute. It is patronized by the better class of workmen.

The Massey Manufacturing Company, of Toronto, established a free library for the benefit of their employes, in January, 1885. The reading matter consists of about 75 of the leading English and American literary and scientific magazines and newspapers. These, after being kept on file in the library for a certain length of time, are lent to employes for home reading, under certain by-laws and regulations prescribed by the Workman's Library Association of the company. The company have also established a memorial hall and a lecture room. The former was established in memory of the late Charles A. Massey, manager and vice-president of the company, and is used for holding literary and musical entertainments among the employes of the establishment, chiefly during the winter months. The lecture-room is used for Sunday school purposes for the benefit of the children of employes and such others as may choose to avail themselves of its advantages. The library, lecture room, etc., seem to be well patronized, especially by the better class of employes, though, as regards the first mentioned, its patronage has been lessened to some extent by the establishment of the free city library.

Messrs. H. E. Clarke & Co., of Toronto, had a free library and reading room in operation for some time for the benefit of their employes, but upon the establishment of the public library it was discontinued, and the books donated to the hospital. The library, which consisted of between 300 and 400 books and magazines contributed by those connected with the establishment and their friends, was well patronized during its existence.

GENERAL NOTES ON LABOR AND WAGES.

ALMONTE.—The shops and factories have been running steadily on full time during the past year, with the exception of the Almonte Knitting Company's mill, which was closed for about two months during the early part of last winter, the cause said to be for necessary repairs. Factory hands, with the above exception, have had steady employment during the past year. Although the woollen manufacturing business has been unprofitable during the year, yet the mills have been kept running at full time, giving steady employment to the operatives, and notwithstanding the unfavorable state of trade, wages were maintained at the same rate as for some years previous. Building operations were unusually brisk during the year, which caused outside labor to be prosperous during the summer months. There are no reading rooms nor libraries maintained in connection with any trade, factories or workshops, but there is a Mechanics' Institute with a large library connected, which is available to all who desire to become members.

BRANTFORD.—In the closing months of 1884 reductions in wages and short time were general through out the workshops of the city, and it was not until late in the spring of 1885 that the manufacturing establishments, particularly agricultural implement shops, resumed full time. The cause assigned for this dulness was the troubles in the North-West. About the middle of May, however, a gradual increase took place in the number of workers; all of the various establishments began running full time and they have been busy since with the exception of the cotton and wincey mills, which were running on irregular and short time during the summer months. It is difficult to arrive at any accurate estimate of wages earned by those who work by the piece and on irregular time. If workmen would endeavor to keep an account of their wages and cost of living it would tend in a great measure to habits of economy. Accidents are numerous in all factories where machinery is used, as every kind of work is done by machines dangerous to employes, if not well understood. Many sustain injuries on account of their own carelessness, but sometimes an accident occurs which brings into prominence the question of supervision of all factories and workshops. A Factory Act, with inspection of all manufacturing establishments, would meet the wishes of a large and growing constituency, particularly those artisans who come here from the old country, where legislation of this kind is in force, and who feel that here the Government should exercise some sort of supervision where so many are engaged in the manufacturing industries of the country. Any action of the employers of labor that would tend to the comfort and convenience of those workingmen who all the year round eat their noonday meal on the workbench or forge would be appreciated by a large number of workers in every large factory and workshop. The only library in connection with any of the establishments here is at the Grand Trunk works, where also is a reading room in which the leading newspapers may be seen on the tables. It is managed by the men, and is well sustained. There is also a life insurance and direct benefit fund in cases of sickness or accidents; it is managed by the company and gives good satisfaction. Among workingmen there are direct benefit funds to relieve distress in case of sickness or otherwise. These are managed by the different unions and do a great amount of good. The very best of good feeling exists between the employers and their men here, as kindly acts of most of them amply prove.

CORNWALL.—The wage earning population of Cornwall has as a general thing done very well the past year. The factories have been running very steady. Though there is not much change in the rate of wages, it still has been a large increase to the worker's earnings, as little time has been lost compared to last year. The sash and door factories have been running full time. Carpenters, bricklayers and masons have done very well, as many houses were built this summer and some of them were substantial ones. About the holidays every one expects a dulness for out-door workers, and as a general thing the winter season is dull here; but there are always a few employed during the winter finishing up work commenced in the last of the season. The different factories have gone to large expense providing precautionary measures in case of fire. They have force pumps in use which will, with the good supply of hose kept on hand, drown out a fire in a few minutes in any part of the buildings. At certain distances all around the mill hydrants are placed, and a squad are usually drilled to act as firemen.

GANANOQUE.—The majority of men say the last year has been better for them than the two previous years. The time employed depends largely on the water supply, and last summer the Water Power Co. improved their property at the south of Charleston lake, thereby draining the whole area of the lake and several smaller ones emptying into it. One important business change was made—the carriage works' property was bought by a party of capitalists from Cincinnati, who greatly enlarged their business, turning out eight hundred cutters and sleighs for the winter. The clothes wringer and corset steel works of Cowan and Atkinson were destroyed by fire in March, but they have been rebuilt on a different site and will shortly be in working order. The axle works closed for about a month on account of overstock, and the shovel, spade and fork works for about the same time on account of small demand for that class of goods.

HAMILTON.—During the fall months of 1884 the building trades were active, completing nearly all work then under construction before winter fairly set in, thus throwing upon the market nearly all those engaged in these trades until spring. The spring opened with favorable prospects and assisted to a very great extent by the reduction of the hours of labor from 60 to 55 hours per week, agreed upon by these Trades Unions and the Builders' Associations, regulated the work so equitably that many who opposed the reduction of the hours of labor very soon acknowledged their approval, and friendly relations existed throughout the season, notwithstanding the predictions of many that there would be trouble over the reduction. Summer opened with no change except a slight weakening on the part of the carpenters and painters, who experi-

enced a dull spell, but as the summer advanced all were steadily employed. The fall opened with nearly all employed and work continued brisk until a scarcity of brick occurred, owing to large shipments being made to Toronto, Woodstock and other places. This created a dulness which continued throughout the season, with no change. But altogether a fair season is acknowledged by all. Pay-days are fortnightly, and on Saturday, with one day's pay kept back, and workmen always paid in cash.

The tobacco industry is a very important one to the workers of the city, employing a large number of male and female labor in the manufacture of cigars and plug tobacco. The latter business was active throughout the season, with apparently friendly relations existing between employer and employe. In the cigar trade occurred the only important strike of the year, which resulted in about 200 workers being thrown out of employment for about six months. A difference arose between the cigar-makers' union and the manufacturers, which resulted in a combination of manufacturers being formed under $500 bonds to resist the union, who were apparently locked out unless they acceded to the terms of the combination. Arbitration was resorted to by the workers, but without any good result. Non-union cigar makers were brought into the city, and at one time grave fears of trouble were prevalent throughout the city. A break was made in the ranks of the manufacturers by the united efforts of organized labor, after which a gradual weakening of the combination was perceptible until the early fall, when a majority of the shops were employing union labor again. So determined was the combination in this case that a suit was entered in the courts to recover the amount of bond from the manufacturer who withdrew from the Association.

In the cotton mills no change has taken place. The mills are running nearly full time. Wages are very low, however, many at times being unable to procure enough to exist upon, and are hoping for an increase of wages, or other employment. No strikes have occurred, but murmurs of discontent have been heard on several occasions.

The clothing industry, especially the wholesale manufacturing business, has been more or less affected by the late North-West troubles. During the summer months the trade was dull, but the fall brought a change for the better, and it has continued fair. Day workers in the sweat shops (principally females) have been steadily employed, but wages are very low, and such shops as a rule have poor ventilation.

The shirt-makers are about the worst paid class of female workers to be found in the city. Fortnightly pay-days are the rule, but many, after working steadily for two weeks, will have earned only three or four dollars few making more than six dollars per fortnight. Good ventilation and excellent water in these shops.

The printing trade experienced a very dull winter and summer. Spring entered with fair prospects, but gradually became dull as summer advanced. As fall approached business braced up a little, and as the winter set in all were fairly employed. Pay-days are weekly as a rule in the printing trade, and payments are made in cash.

Labor has experienced a very quiet year, particularly those who generally follow municipal works, owing to the large importations of Italian laborers brought to work upon the cedar block pavement, of which there has been a considerable amount done. Numerous complaints were made to those in authority at the great injustice done this class, a large proportion of whom have been ratepayers for years, and have been unable to secure employment even at the small pittance paid by the contractors. That class of laborers engaged in brickmaking, while their season was very short owing to late spring frosts, yet had a brisk summer, and very fair wages were made.

Teamsters were busy all season. The increased amount of block-paving done, in addition to general work, made quite a demand for teams and teamsters; in fact the months of August and September were the busiest season ever experienced.

On the whole the past season has been favorable to all branches of industry. With no extra demand for labor, all have been fairly employed, and with but one or two exceptions harmony prevailed throughout the city between the two great elements, Capital and Labor.

KINGSTON.—Trade and business in this city for the past year have been very dull. Building work, however, has been very good, men with money taking advantage of the low wages to have it done cheaply. The locomotive works, which formerly employed five hundred men, have been closed for nearly two years. The car works are also closed, throwing 150 more out of employment. With so many men out of regular work, wages are greatly reduced, laborers working for as low as eighty cents per day. The cotton mill hands were on short time for a period during the summer, and the knitting mill alone made full time during the year. The piano factory was closed for three months during the summer, but is now running with greatly reduced number of hands. The Kingston foundry has been on short time for a period, and with reduced force. In former years there were shipped from this port to the United States thousands of tons of iron ore brought down from the back country, which was opened up by the Kingston and Pembroke railway, but owing to the great depression in the iron trade the mines have been closed during the past year and not one pound has been shipped. The forwarding and transportation companies also have done very little, vessels not coming this way with grain, owing, it is said, to the high canal tolls There have been no strikes in the city. Men who have employment are very glad to take whatever wages are offered them, for if anyone refuses there are a great many glad to take his place.

OSHAWA.—Owing to so many of the works in town having been closed down last winter, great suffering occurred amongst the wage workers, which continued until the spring. The benevolent societies and labor organizations formed a relief committee and solicited subscriptions from the citizens, who contributed liberally, by which means many of the most needy were enabled to tide over the severe winter. The tanneries and carriage works have run steadily during the year, with good prospects for the coming one.

OTTAWA.—Owing to the large number of public works and building operations which have been carried on in and around Ottawa, the demand for laboring men and such mechanics as carpenters, bricklayers, etc., was greater than the supply, and wages, as a rule, were a shade higher than in 1884. But of course the greater portion of these works, together with the saw-mills, were obliged to cease operations with the advent of cold weather. This caused a slight reaction in the labor market, but they can invariably find employ-

ment around the city during winter, or by going to the woods. Of course there are some cases of destitution but they are almost invariably the result of sickness, laziness, or drink, and not necessarily the result of lack of work.

PETERBOROUGH.—Owing to the large building operations of a number of the leading property owners here the demand for labor of all kinds has been brisk during the last two or three years. In the season of 1884 about a quarter of million of dollars was expended on the erection of new buildings, and a like amount in 1885, consisting of stores, dwellings and factories. Among the latter is included the Powell & Jones stove works, removed here from Smith's Falls, and the lock factory, a new industry. There are three woollen mills—the Auburn employing 150 hands, Brodie's, 75, and Melson's, 19; a stove factory, 55; a lock factory, 45 to 50; bridge works, 30; a pork packing factory, 12; a foundry, 65 to 90; agricultural implement works, 70 to 80; two canoe factories, about 25; five flouring mills, about 25; three furniture factories, about 50; two planing mills, about 20; biscuit factory, 12; brewery, 12; five saw mills, manufacturing about forty million feet of lumber annually, and a number of other factories manufacturing articles for local consumption. Owing to the general depression in trade many of these have reduced the number of their employes, and the figures above given represent the reduced numbers. Taking everything into consideration the condition of the working classes is very fair.

ST. THOMAS.—Representative men in all departments on the Grand Trunk and Canada Southern railways here urge the following reforms: That laws be framed and enforced prohibiting the use of outside valve oilers on any locomotive. That railway companies be compelled to erect semaphores with signal lights at proper distances on both sides of all stations and switches, and red or her boards with red and white lights, and red and green lights on all switches, with red and white targates. That all head lamps be provided with red and green shades. That the best improved car coupler be used and all dangerous dead woods abolished. That caboose tracks be provided at all terminal points. That a stated number of cars comprise a freight train, under control of five as crew, grades and engine power considered. That no railway company have the power to fine an employe for being garnisheed, as many have suffered by this persecution owing to low wages. That companies be disallowed the power to reduce their employes' wages without at least one month's notice thereof. That the same notice of dismissal be given employes as is required of employes seeking their resignation. That equal pay be allowed for equal work, regardless of length of service. That no company shall black-list their employes for any offence, fancied or real. That a board of arbitrators be selected, composed of men in the interest of the company and a like number in the interest of the employes selected by themselves, with power to settle all differences. That railway employes be under the immediate control of their superintendent, with power to refer unfair decisions to the board of arbitrators for finality. That Government, at its earliest convenience, appoint a railway commission to make a rigid investigation into the true state of affairs existing between employers and employes. Stationary engineers urge that engineers should pass an examination before a competent board, or not be allowed to run an engine and endanger the lives and property of the public.

STRATFORD.—During the latter part of 1884 and the forepart of 1885 some of the works were running short time, but during the summer and fall all the shops, with one exception, were running full time, and in some cases overtime. The city built a new stone bridge across the river Avon, giving occupation for over three months to a large number of stone-masons and laborers. The Water Supply Co. extended their water mains largely during the summer, and gave employment to many laboring men. The county of Perth has in course of erection a new court house and gaol, which will not be finished, however, until near the close of 1886. These public works going on in the city have made times pretty good for laborers, masons and stone-cutters during the summer months, but a great many men were idle during the late fall and winter months. Two new industries have been started, viz., Bates' Cardigan Overshoe and Knitting Factory, and the J. A. Kirke Wool Stock Mills. These have started on a comparatively small scale, but it is intended to about double their capacity the coming season; they give employment chiefly to females. Wages as a rule have not been as high the past two years as in the two years previous, a state of affairs which a great number of wage-earners ascribe to assisted immigration. Up to this summer there has been no labor organization here, but in the latter part of the summer the Knights of Labor instituted an assembly, which has been taken hold of most energetically by the workmen of the city. The first assembly soon becoming unwieldy, owing to the large numbers joining, another has been instituted which promises soon to become as strong as the first. No strikes have occurred during the year except in one of the printing offices, and this only lasted for a day or two. The payment of wages in general appears to be very satisfactory, the practice in almost all the shops and factories being to pay in cash weekly or monthly. In some shops employes are paid in full every week, but in others one week's pay is held back. The relations between employers and employes generally appear to be of a very amicable nature. The general health of the workers is reported good. Factories and shops in general are well ventilated, and so arranged as to afford an easy means of exit in case of fire, the doors of none of the shops being locked or bolted during working hours.

TORONTO.—The winter of 1884-5 was no improvement on that of 1883-4, whether considered as to its temperature or in furnishing employment to workmen. The large numbers who found relief throughout the cold months at the doors and through the hands of the various city charitable and benevolent societies bear ample testimony to the fact. A rather long and unusually raw spring retarded building operations until well into the season, so that the temporary boom which followed was due rather to this than to any increase in the volume of business in the building lines over that of previous seasons. All through the season the labor market furnished many more seeking employment in all callings than could be accommodated. As an offset to this, however, the fine fall weather enabled many, and especially those engaged in any out-door vocation, to make up in some degree for the lost time of the spring, as well as to that extent shortening the length of the coming winter.

PART IV.

MINERALS AND MINING.

INTRODUCTORY REMARKS.

For the purpose of gaining information on the progress of mining operations in the Province it has been necessary to make long and sometimes arduous journeys to the scenes in which they are carried on. Numerous efforts have been made to obtain statistics and reports of progress from the owners of mining properties, but almost invariably without success. A part of the information required is of a technical character, and few men even among those who are in charge of works are able to give it intelligently. Besides, the writing of reports is out of their line, and being sufficiently employed with business affairs they are not disposed to give time for labor that does not promise them an immediate return. There are exceptions, of course, but in the case of the exceptions there is a risk of exaggerated statements being made with a view to boom the property. On the whole, therefore, it is better to get all information relating to mines and the mining industry on the grounds, even although the work be toilsome and the experiences occasionably disagreeable. I have always been cordially received among mining men, and besides every opportunity being afforded for inspection of the works, the officers in charge have cheerfully given statistics relating to laborers, wages, output, values, etc., producing their books where it was necessary to procure exact statements.

In visiting the silver mines of the Lake Superior region I had the advantage of being accompanied by Mr. Peter McKellar of Fort William, himself an old explorer and one of the best geologists in the country. To Mr. McKellar I am indebted for information concerning the Huronian and Partridge lake gold mines, as well as of the zinc-blende mine near Nepigon bay, which, for want of time, I was unable to visit personally. To Mr. George Mitchell, real estate agent at Rat Portage, I am indebted for an account of the gold mines on Lake of the Woods, all of which were closed down last fall.

While there appears to be a large area of poor and rocky land in this Lake Superior district, and especially along the line of the Canadian Pacific railway from Norland, 55 miles west of Port Arthur, to Rat Portage, there is a very considerable area of wooded land in the region southward of the railway. Soil of excellent quality is found soon after crossing the Kaministiquia river, in the township of Paipoonge, and extending to Whitefish lake, fifty miles from Port Arthur. It is chiefly clay loam, and well timbered with white poplar, birch, jack-pine, and a little spruce and balsam. Should the mines prove to be productive, the land will doubtless be speedily settled upon, and farmers there could depend on a good home market for all their surplus products. The chief drawback at the present time, both to the development of the mines and the settlement of the country, is the want of communication with either the railway or the lake. But a good road is now under construction, starting from the Oliver road, and having its proposed terminus on Whitefish lake. It was located last year as far as Silver Mountain mine, 21 or 22 miles from the Oliver road, four miles of which were completed, and a further length of eight miles opened as a fair winter road. It passes along the base of Rabbit Mountain, and within easy reach of almost all of the best mining localities.

GOLD.

Pine Portage Mine.—This mine is situated on Pine Portage bay, six and a half miles east of Rat Portage. It was discovered in 1869 by John G. Macdonald, but the property has since changed hands, and now the principal owner is Mr. T. W. Dobie, of Tilson-

burgh. The vein ranges from four to ten feet in width, and has been traced by out croppings fully a mile in slate and trap. The matrix is blue quartz, heavily charged with sulphurets of iron and silver-bearing galena. The visible gold generally appears in a flaky and leafy form. The concentrates never have been subjected to the furnace test, but tests made by acids show a yield ranging from $60 to $1,000 per ton. A stamping mill was erected in 1883 with five stamps, and shafting for five more which were placed the following year. The mill has two Frue vanners and a grinding pan. The engine for driving the stamp is of twenty-five horse power. Each stamp is supposed to have the capacity to crush a ton of ore in twenty-four hours, or say ten tons per day for the mill. One shaft has been sunk to a depth of 138 feet. This is half a mile from the shore and three and a half miles from the Canadian Pacific railway, and is at the junction of two veins. A cross cutting made at the depth of 100 feet to ascertain the width of the vein shows it to be over forty feet wide, and very rich. When worked in 1884 twenty men were employed, but the mine was closed down late in the fall of that year and nothing has been done since.

Winnipeg Consolidated.—This mine is situated on Big Stone bay, twelve miles east of Rat Portage. It was discovered in 1880 by George McVicar and two leads have been worked. The second vein was discovered in 1882 by George Mitchell and J. R. Brown, and a shaft sunk on it to a depth of twenty-five feet. This was afterwards abandoned because of water overflow, and in 1883 a five stamp mill was erected on the McVicar location, "F 22." It has a sixteen horse power engine with grinding pans and amalgamators. The working shaft is 132 feet deep, with four drifts or tunnels, the total length of which is 150 feet. The vein is six feet wide, with a pay streak of two and a half feet. It pinches in and spreads out continuously in the descent and the ore is chiefly free gold, with only a trace of silver, yielding from $40 to $600 per ton. The foot wall is black trap and the hanging wall yellow and blue slate. Gold has been found in the slate—a very rare occurrence. After a depth of forty feet the quartz was found to be crystalized and heavily impregnated with gold. The mine was worked for about a year and at one time forty-two men were employed, some in the shaft, others getting out timber, etc. A substantial shaft house and other buildings have been erected. About $950 of gold has been taken out, but it has not paid expenses. It was closed in August, 1884. It is situated on the margin of the lake and steamboats of any capacity for the lake traffic can land at the wharf. Water for feeding the stamps is pumped out of the lake.

Argyle Mine.—This mine is situated on Clearwater bay, four miles south of lake Deception on the Canadian Pacific railway, sixteen miles west of Rat Portage. The vein is of rose quartz, about four feet in width, and is impregnated with iron pyrites and other sulphides. It was discovered by Alexander McFadden and Martin Sherlock in 1880, who sold out to Stephen Knight of Winnipeg for $5,000. Mr. Knight formed the Argyle Mining Company in 1882 and proceeded to erect a ten stamp mill with Frue vanners. No working shaft has been sunk, but a series of test pits have been put down showing visible gold. It was worked for six months, but the results were not satisfactory owing to the manner of conducting operations.

A number of other leads have been discovered in this part of the country, and test pits have been sunk to depths of ten, fifteen and twenty feet, shows of gold ore being found of varying degrees of richness. Work at the three mines referred to has been stopped, mainly for want of funds. A number of capitalists have been making inquiries with a view to investment, but one and all hesitate so long as questions involving the title to the minerals are pending between the local and the federal governments. Experts have visited the region in the interests of those capitalists and their reports have been exceptionally favorable.

Huronian Mine.—This mine is fifty miles west, south-west of Savanne station on the Canadian Pacific railway, and a mile south-west of Jackfish lake. It was discovered in 1871 by Peter McKellar of Fort William. The vein consists of chloritic and talcose slates in the Huronian formation, and out-crops at several places five to eight feet wide. It was

opened out in 1871 and a half interest sold to Messrs. Frue & Sibley of Silver Islet. Some work was done in that and the following year, and a road thirteen miles in length was cut to lake Shebandowan. In 1874 the proprietors organized as the Jack-fish Lake Mining Co., and a little work was done on this and other properties. But no substantial work was done until 1881. In that year one and a half tons of ore were taken out and sent to New York for assay by Frue vanners and amalgamation. The test showed $26 of free gold to the ton and $23 additional in sulphides. In that year a company was formed, composed chiefly of Ottawa capitalists. The sum of $50,000 was paid for the property and $50,000 additional was put in as working capital. Mining was commenced in March of 1882, with Mr. McKellar in charge as superintendent. Buildings were erected and a ten horse power engine put in, with Blake's pump and rock breaker, ten stamps, four Frue vanners and two copper amalgamators. Between thirty and forty men were employed up to October, 1884, when work was stopped until August, 1885. It is now (September 20, 1885,) in full operation, employing forty men whose wages range from $30 a month, with board, to teamsters and other laborers, to $35 a month to carpenters and miners. Mr. Esweiler is in charge as superintendent. A shaft has been sunk to a depth of 130 feet, the richest ore being found at a depth of 100 feet. At a depth of 55 feet one level has been driven into the vein a depth of 150 feet, and one is now commencing 50 feet lower. About 700 tons of ore have been milled and 40 tons of concentrates obtained, averaging $150 per ton, in addition to $1000 of free gold.

Highland Mine.—This and the Huronian mine are on the same vein, which has been opened by cross cuts for 2,000 feet on the latter and 1,000 feet on the former. The original owners were McKellar Brothers, John McIntyre, of Fort William, and others, and they have sold a half interest to Messrs. Frue and Sibley. The chief drawback to the working of these mines is the difficulty of access, as the road which has been constructed is only passable in the winter season.

Partridge Lake Mine.—This mine is situated twenty miles west of Lac des Milles Lac, and was discovered by Archibald McKellar in 1872. It was opened in the summer of 1884 and one and one-half tons of ore taken out, assays of which gave $30 per ton with shows of free gold. A rich gold vein has also been discovered twenty miles west of Partridge lake, on Ossinawan lake, but very little has been done on it. The proprietors are Messrs. George McLaren and John McKellar.

Richardson Mine.—This once famous mine is located on lot 17, 5th concession of Madoc, county of Hastings. It was discovered in 1866 and was worked off and on for a couple of years. Then the property became the subject of litigation, but for the last twelve or thirteen years it has been in the hands of a syndicate who resumed work in December last, after the mine had been idle for many years. The present owners are men of large means, and it is expected that the value of the property will be fairly tested. The old shaft, which is not on the main vein, has been pumped out and is being driven to a greater depth, and a new shaft has been opened about 100 feet further north, on the main vein. At the time I visited it (in the latter part of March) a depth of about 40 feet had been reached. If satisfactory results are obtained it is probable that the ore taken out of this mine will be treated for the present at Brown's stamping mill at Bannockburn, which will be repaired for the purpose. The vein is quartz, spar and dolomite, mixed with sulphurets. As an indication of the richness of this mine, a gentleman informed me that he saw 192 dwt. of gold washed out of two shovelfuls in 1866, and one man got a lump of rock which he sold for $400. Miners on the works are paid at the rate of $1 per day.

Deloro Mine.—Work on this mine was stopped on the 5th of January last. The ore is undoubtedly rich, but hitherto the most economical process of working it does not appear to have been tried at the mill, and a large sum of money has been expended on experimental work. Successful results were formerly obtained at the old stamp mill on the premises, the yield being $14 to $18 per ton as it came from the mine. One shaft is down 200 feet, and during last season a large quantity of ore was taken out.

Craig Mine.—This mine is in Tudor township, Hastings county. The vein is well defined and rich in gold and copper sulphurets. Quantities of the ore have been treated in the Bannockburn crusher and a few hundred dollars taken out, but the mine has been closed for the last two or three years.

Gladstone and Sulphuret Mines.—These mines, which were discovered in 1868 or 1869, are on the Moira river, on lots 16 and 17 in the 11th concession of Marmora. The Sulphuret vein, which runs east and west, is supposed to be the same as that of the Richardson mine. The Gladstone vein runs northeast and southwest. Four shafts have been sunk in the latter, the deepest of which is about 60 feet, and the others about 40 feet. It is now owned by a syndicate of five capitalists in Belleville, who took out about $22,000 in 1879 and 1880. It was worked for several years previously, and altogether about $30,000 has been taken out. A small opening had been made in the Sulphuret mine before the syndicate got possession, but the ore was never milled. The syndicate have sunk two shafts, one 30 feet and the other 40, and have a five stamp mill on the property. The gold is free, and has yielded on working tests from $8 to $85 per ton. In the Gladstone mine the gold was taken out by a process of crushing, roasting and amalgamation. In the Sulphuret mine the gold is so fine that all work by this process was lost. It was consequently worked by a process known to California miners, which consists in roasting sulphurets in kilns arranged in such a way as to hold about three charges, and after roasting for three hours the bottom charge is dumped into strong salt brine mixed with a little cyanide of potassium and sulphate of copper. It slakes like lime and the gold amalgamates readily by the ordinary process. The great economy of this method is, that once the kiln is fired roasting can continue without extra fuel. It furnishes its own fuel and will run perpetually. No appreciable quantity, however, was treated except for test.

Feigle Mine.—This is on the Gladstone vein and the lode has a length of about 300 feet. It was worked in 1877, '78, and '79, and about $40,000 of gold taken out. The vein at both ends dips into the Gladstone.

Bannockburn Mine.—Some grand specimens have been taken out of this mine, but gold was not obtained in paying quantities. A five stamp mill has been erected here, the property of Mr. Alexander Brown.

NOTE—Mr. Peter McKellar, of Fort William, writes me under date of December 24: The Huronian gold mine is working a force of six miners, and it is expected that this force will be largely increased before the end of January. The mill test made in the fall proved satisfactory. The whole rock from the drifts averaged over $12 to the ton. By separating some of the poorer rock the average could be raised much higher. In this test over forty tons were run through the mill. Mr. Crow, who made the test, is an old experienced western mill man.

Mr. Thomas Marks, of Port Arthur, writes under date of January 22: The Huronian mine lies in about the centre of the township of Moss, half way between the line of the Canadian Pacific railway and the international boundary. The Huronian is pretty well developed by practical mining with shafts and drifts, and at present there is a large quantity of ore in sight, carrying a good percentage of gold and silver. The company have now a stamp mill and concentrating process erected. There are fifty men employed there this winter, but the greatest drawback to development is the means of communication. The company have a larger quantity of concentrated ore on hand, averaging about $200 to the ton, but have no means of transportation to either railway or water excepting by teaming it over fifty miles, which of course would absorb all the profit.

SILVER.

Silver Islet.—This well-known mine is 1,260 feet deep. It was discovered in 1868 and work began on it in the following year, and was continued with occasional intervals until March, 1884, since which time it has been idle. It is stated that $3,500,000 worth of silver has been taken out.

Rabbit Mountain Mine.—This mine is on location 39 T, on the boundary of 40 T, and covers a territory of 480 acres. It is 25 miles from Port Arthur, and about 650 feet

above the level of Lake Superior, as measured by an aneroid barometer. It is situated in the cleft of the range, the mountain on the south-eastern side rising almost perpendicular to a height of 180 feet. It is a double vein, in black slate capped with trap, and dips to the north-west. It was opened in 1882, and a company to operate it was organized in August, 1884, consisting of General Wild, Oliver Donnais and Daniel McPhee. Four shafts have been sunk; number one to a depth of 42 feet; number two, 150 feet; number three, 24 feet; and number four, 15 feet. In number two shaft a tunnel has been opened at a depth of 60 feet, running 80 feet in one direction and 64 feet in the opposite direction. Thirty tons of picked ore were shipped last year to the smelting works at Newark, N.J., up to the date of my visit (September 18), and ten tons more were ready for shipment. The ore from number one shaft yielded 742 oz. per ton, equal to $808.78; number two, 200 oz., equal to $218, and number three, 144 oz., equal to $156.96. Some ore taken out of number one shaft has assayed as high as $9,000 per ton. Thirty men were employed on the works during the past season, under Capt. McComber as superintendent, sixteen of whom were miners. The rate of wages was $2 per day without board, to miners and laborers alike. A fifteen horse power engine is used for hoisting the ore.

Silver Falls Mine.—This mine is on Silver creek, about 32 miles from Port Arthur and 725 feet above the level of the lake. The vein is promising, but the work on it had made but little progress at the time of my visit.

Silver Hill Mine.—This mine is six miles farther on, in the direction of Silver Mountain. Its elevation is 825 feet above the level of the lake, as measured by an aneroid barometer. The vein has been stripped for some distance, but no work was in progress at the time of my visit.

East Silver Mountain Mine.—This mine is on location R 54, 42 miles from Port Arthur, and 850 feet above lake Superior. The vein near the base of the mountain runs south-west and north-east, and is about four feet wide. In the ascent of the mountain it is found to take a turn due west, widening to seven or eight feet. The vein is calc spar in black slate, but the top of the mountain is capped with trap, across which the vein is easily traced. The discoverer was Oliver Donnais, and last year he succeeded in interesting a Cleveland syndicate in the property. They proceeded to erect works and supply the necessary machinery for prosecuting the work early in the summer. Mining operations began on the 23rd of July, and two shafts were sunk. Number one, about 50 feet up the mountain, was down to a depth of 20 feet at the date of my visit. Number two, 600 feet south-west of number one, on the top of the mountain—which is 250 feet above the plain—was down to a depth of 45 feet. At number one the vein runs south-west by north-west, and about midway between number one and number two it takes a turn and runs due west. Number two shaft is in pure white calc spar with traces of fluor spar and quartz, but without any show of silver. Two adits were also being driven into the side of the mountain to cross-cut the vein. Number one is 55 feet from the base and has penetrated the black slate a distance of 230 feet. Number two is 116 feet above the base of the mountain, and has been driven 55 feet. At this depth the superintendent naturally expected to strike the vein, but as only a faint show of it was visible in one of the adits a fear was entertained that it had pinched out. A few more days' work, the superintendent informed me, would decide the question. Thirty-three men were employed, 24 of whom were miners and the rest wood choppers and laborers, the rate of wages being $2 per day and board. An area of about five acres of woods was chopped and cleared, and a number of necessary buildings erected in connection with the works.

West Silver Mountain Mine.—This mine is on the western slope of Silver Mountain and on the same vein as the East Silver Mountain mine, from which it is distant about one mile. It is about 125 feet above the level of the plain on the eastern side. An adit has been driven into the face of the rock a distance of 30 feet, and at the extreme end of it a shaft has been sunk to a depth of 20 feet. The vein is in black clay slate, is 15 feet wide and dips about 5° north. The matrix is calcareous and fluor spars, with

a trace of quartz and clay slate, and the show of native and glance silver was very promising.

Crown Point Mine.—This mine is a quarter of a mile due north of the East Silver Mountain mine, on a parallel lode and 150 feet above the level of the plain. It is a true fissure vein, runs nearly due east, in clay slate, and is about 2½ feet wide. An adit has been driven into the side of the mountain to the depth of 70 feet, with a cross cut of 20 feet from the hanging wall, 65 feet from the mouth. Specimens of silver ore taken out near the surface are very rich, and the outlook is encouraging. Messrs. Cummings and Montgomery are the owners of the property. Work was begun on the first of June.

Gerrard's Mine.—This mine is on locations 121 and 122, up the Little Gull river, five miles west of Whitefish lake. It is a spar vein, three feet wide, on the west side of the mountain, the dip being 7 feet in 30. The wall rock is diorytie and slate below. On the east side of the mountain the vein is 3½ feet wide, the rock on that side being jasper and on the other granite. Here the dip of the vein is to the south, one foot in ten. The general trend of the vein is north-west and south-east. Both veins show sulphurets of silver.

Holbert's Mine.—This mine is in the same range as the last. There are two veins, one 2½ feet wide and the other 3½ feet, in the former of which black leaf silver is found, and in the latter native silver. It is situated on Sunset lake, south of Whitefish lake. The indications are said to be very good in both veins.

Beaver Mine.—This mine is on Beaver Mountain, which is 230 feet high, two miles south-west of Rabbit Mountain, and is owned by Messrs. Keefer, Furlong, McPhee & Donnais, the latter two of whom were the discoverers. Work was begun in November, 1884. Two adits have been driven on the west side, the first 25 feet from the base, reaching a depth of 200 feet, and the second 105 feet from the base, reaching a depth of 135 feet. Both are in black slate, the extent of the fault being about 15 feet, but the vein was not reached at the time of my visit on September 20th. On the eastern side of the mountain one adit has been driven to a depth of 30 feet into the vein from a point 155 feet from the base of the mountain, 75 feet from the summit, and 100 feet above the level of the Rabbit Mountain mine. The hanging wall here is trap, and the foot wall a silicious clay slate. The vein is of calcareous spar, three feet wide, a portion of it being a greenish, soft, soapy stone of a talcose nature. There is a good show of silver, with zincblende and fine galena. On the west side the vein is a calcareous spar, 15 feet wide, with a horse of slate 6 feet in width occurring in its course. The top of the mountain is trap and the course of the vein is clearly traced nearly the whole distance on the surface from one side of the mountain to the other, the breadth of the mountain at its base being over 400 feet. Eight men were employed on the works, six of whom were miners. The rate of wages was $2 per day to miners and $1.75 to common laborers, with board.

Several other silver mining locations have been tested in the region of country between Rabbit Mountain and Whitefish lake, but work on all of them, including Twin Cities mine, appears to have been abandoned for the present. At all the mines work is carried on with great difficulty, owing to the want of roads.

Note—Mr. Peter McKellar, of Port Arthur, writes me under date of December 24: The Silver Mountain bonanzo gave out. The company stopped work and took everything away before the close of navigation. Donnais's west end location, Silver Mountain, is not working at present, but it is expected to be in operation soon by a strong American company. Eleven tons of the ore of this lode were sent by rail to New York about two weeks ago. Should it turn out as expected I believe the American company will put on heavy works in the spring. The Beaver mine and Silver Creek location are being worked, and report says they are yielding good ore. Some ten tons of ore from the Beaver were shipped to New York about ten days ago, but the result will not be known for some time. Mr. Keefer has made arrangements with an American company by which a stamp mill with a capacity of 25 tons a day is to be erected at the Beaver, and the three mines, the Beaver, Silver Creek, and the Twin Cities, are to be worked for six months with a strong force of miners. Capt. Trethewey told me the other day that the company has purchased a lot of machinery from Silver Islet for the Beaver, such as air compressor, steam drills, etc. Capt. McComber has taken out some rich ore lately from the Rabbit Mountain mine and shipped several tons. It is claimed that a large stamp mill is to be erected at this mine shortly.

Mr. Thomas Marks, of Port Arthur, writes as follows under date of January 22: The Beaver mine is now working about 75 men, drifting three tunnels through the mountain, all of which are carrying a strong vein of silver ore, and there is now in view nearly 300 feet in depth of vein matter from the top of the mountain to the lower tunnel. Several car-loads of this ore have been shipped to New York for a test, and the lowest product was $160 to the ton. I was present myself at Riotte's metallurgical works in New York when the last test was made which produced the above figures, and I was told by Mr. Riotte it was about the easiest and cheapest ore to reduce in America. The process was simple, the ore first being crushed in a mill as fine as flour, then put in the amalgamating vats with quicksilver, when 97 per cent. of it was saved. I also witnessed a test of the West Silver Mountain ore by the same process, which resulted in a larger yield than the Beaver. Three or four car-loads of the Rabbit Mountain ore have been shipped to different reduction works in various parts of the United States and have resulted in a still larger yield than those I have described. The Rabbit Mountain people are now sinking three shafts on their property and driving a drift which carries good milling ore. There are about 40 men employed on this property. Their agent is shipping to-day two car loads of rich ore to New York. They propose erecting a mill before the opening of navigation, when all their ore will be reduced on the spot. The Twin City mine is a fine, well-defined vein, carrying good milling ore, which tested in quantity from $100 to $300 to the ton. There are about twenty men employed there at present. This ore will be reduced by the Beaver Mining Company as soon as their mill is in operation. The Silver Creek mine, in the vicinity of the Beaver, is being operated by the Beaver Company. It shows a splendid defined vein, carrying good pay rock. This ore will also be treated by the Beaver Mining Company, the agent of which is now in New York purchasing machinery for the erection of a large mill. Two car-loads of the machinery are now here and are being teamed to the site. Judge Cross of New York arrived here last week and has just concluded the purchase of the West Silver Mountain mine for $25,000, $10,000 of which was paid in cash yesterday, and a sleigh load of men left here to-day to start work. This company are bound by their agreement with the former owners to erect a mill on the opening of navigation. Were the Thunder Bay Colonization railway built and in operation from here to the south side of Hunter's Island, it would be the means of developing a large mineral, agricultural and timber country in the western part of this Province, which is yet almost unknown to the people of the east. It would pass in the vicinity of the mines now in operation which I have already mentioned, and a tramway of 15 miles from its main branch at Hunter's Island would give ample means of traffic to the Huronian mines in the township of Moss. Mr. McEwan, of London, England, who is a stock-holder in the Huronian and other mines in that vicinity, proposes to build this tramway as soon as there is any possibility of joining the Colonization road near Hunter's Island.

IRON.

Kingston and Pembroke District.—None of the mines along the line of the Kingston and Pembroke railway have been operated during the past year, but early this year a company of New York men was organized with a capital of $2,000,000, and work was begun on the Bethlehem Company's mine in Levant, on Caldwell & Gildersleeve's mine in the same township, and on the Zanesville mine in Bedford. Sixty men were employed, and it is expected that a large quantity of ore will be taken out during the present year.

Coe Hill Mine.—Work at this mine was carried on continuously during the year 1885. Number one shaft has now a depth of 135 feet, with three tunnels, the first at a depth of 60 feet being 60 feet long, the second at a depth of 90 feet, 75 feet long, and the third at a depth of 125 feet, 10 feet long. The first and second tunnels have struck the cap rock, which is found to rest obliquely on the vein. The third is not yet finished. Number two shaft has a depth of 140 feet. It has two tunnels, one 40 feet long and the other 60 feet. Work in this shaft was stopped during the year. Number three shaft is 100 feet deep, with one tunnel 65 feet from the surface, 150 feet long, running east and west. During the year there was taken out of number one shaft 9,782 tons of first-class ore: from number two, 9,179 tons, and from number three, 9,416 tons, being a total of 28,307 tons of 2,240 lbs each. There was also taken out of the three shafts 3,752 tons of second-class ore. The quantity of ore shipped during the year was 10,508 tons, of which 100 tons were shipped to Bessemer, Pa., and the rest to Cleveland. * The miners are paid by piece work, a "pair" of three men working together. The rate of pay for the first half-year was 35 cents per foot, and for the second half 33 cents—3 feet 10 inches being the average of one man. These rates are about equivalent to $1.35 per day for the first half year and $1.25 for the second half. The largest number of miners employed during the year was 35, and the lowest 26; the average being about 30. There were employed in addition about 30 laborers, underground men being paid at the rate of $1.10 per day and surface laborers at the rate of $1 per day.

* The ore at this mine is found to contain a small percentage of titanium, which impairs its value for smelting purposes. The demand for it is consequently inactive. The works were closed on the 31st of March of this year, and will not likely be opened again until the ore now mined has been roasted and shipped.

The Nugent mine is in the neighborhood of the Coe Hill. It was stripped a year ago for a length of 1400 or 1500 feet. The iron was found to be free from sulphur and of fine quality. Messrs. Brown, Goujot & Stewart are the owners. A mine owned by Messrs. Jenkins & Chambers, of Madoc, between the Coe Hill and Nugent, has also been stripped and some pits sunk. It is a fine magnetic ore and of large extent. Several other mines of rich magnetic iron have been found in the same locality, and along the Bailey survey of the extension of the North Hastings road from El Dorado to Bancroft forty-two mines have been prospected, but none of them fully tested.

Belmont Mine.—This mine is situated on the west half of lot 19, in the first concession of Belmont, Peterborough county, four miles north of the village of Blairton. Prof. Heys, of Toronto, who reported on the mine last October, gives the following particulars regarding it:

The deposit of ore is situated near the east side of the half lot, about mid-way between north and south on the lot, and has been cleared and under-brushed. On this is an exposure of magnetic iron ore, running north and south for a distance of 63 feet, with the soil stripped to a depth of four to five feet. The excavation, which is from 3 to 5 feet wide, shows what appears to be a solid bed of ore, with a westerly dip of 20°. The ore is strongly magnetic, of fine grain and mixed with actynolite, while other portions show a compact ore, almost free from rock matter and very free from sulphur. Two other excavations were examined; one about 60 feet to the south, and the other about 120 feet to the east. The ore in these was overlaid with surface soil to a depth of two to three feet, and the upper portions of the ore inter-mixed with green rock and talcose schist. The character of the ore in these appeared to be the same as in the other exposure, some hematite of fair quality showing in the third exposure. The extent of the ore bed, as shown by the dip-needle, is more than two acres, measuring about 250 feet from east to west by 390 feet from north to south. It is covered by surface soil to a depth of four to five feet (in some places perhaps more), which can be easily removed. From the indications presented it would not be possible to determine, or even approximate, the amount of ore, but there is evidently a very large quantity.

Prof. Heys made an examination of several samples of average ore from the different exposures, the result being as follows:

Ferrous oxide	27.32	=	Iron 21.25
Ferric oxide	58.93	=	Iron 41.25
Sulphur	.03		
Phosphorus	.08		
Titanium			None
Alumina, etc. (by difference)	3.14		
Pyroxenic rock-matter	10.50		
	100.00		

The metallic iron is consequently 62.5 per cent. Prof. Heys adds: Judging from the ore exposures, the dip of the ore and the magnetic attraction in connection therewith, over a space of more than two acres, I consider the deposit to be very extensive, and should say that there is no doubt it contains a large quantity of first-class ore, with no trace of titanium, and practically no phosphorus or sulphur, while the rock matter would be to a considerable extent self-fluxing.

The Snowdon Iron District.—An important iron district occurs in the township of Snowdon, county of Haliburton, and in some of the adjacent townships. On lot 20 in the first concession of Snowdon, seven miles east of Kinmount, are found promising deposits of magnetic iron ore, yielding over 60 per cent. of metallic iron with very little impurity. A considerable quantity of ore has been mined on this lot by different parties. The lot is owned by Messrs. Thomas Shortiss and Henry O'Brien of Toronto. Mr. Wm. Myles, who bought a portion of this property, built a branch railway 6½ miles long in 1879, from the Victoria railway up to lot 20, and this is likely to form the first link in the Irondale, Bancroft and Ottawa railway, a company having been chartered to build a railroad through this district. Messrs. Parry and Mills of Chicago have built a charcoal furnace on lot 19 in the first concession of Snowdon. They have also constructed, in connection with it, a good dam and saw-mill on the Burnt river, but after expending about $40,000 operations have been suspended for want of funds.

About three miles east of this occurs an extensive deposit of magnetic iron ore on lots 25, 26 and 27 in the fourth concession of Snowdon. Several out-crops, extending more than half a mile in length, appear on these lots. These are entirely free from titanium and contain practically no sulphur or phosphorus, the metallic iron running as high as 63 per cent. Lots 25 and 27 are owned by a company represented by Mr. T. D. Ledyard, of Toronto, and lot 26 is owned by Mr. H. S. Howland of Toronto, and leased

to a company represented by Mr. Charles J. Pusey of New York. Several shipments of ore have been made from lots 25 and 26 to the United States. Lot 27 has not been much developed, but it shows good deposits in several places.

Lot 24, in the third concession of Snowdon, contains a bed of limonite, or brown hematite, discovered by Mr. Ledyard. A considerable quantity is shown on the surface, but it has not been tested to any depth. This ore is not rich enough for export, but it carries about 50 per cent. of iron.

On lot 23, in the twelfth concession of Galway (the next township to Snowdon to the south), is a promising deposit of magnetic iron ore, known as the Swamp Lake mine. The ore body shows 60 feet in width where it crosses the creek. Prof. Chapman has made the following analysis of the ore :

Magnetic Oxide of Iron	86.46
Alumina	1.04
Oxide of Manganese	1.27
Lime	Trace.
Titanic acid	0.00
Phosphoric acid	0.02
Sulphuric acid	Trace.
Siliceous rock matter	11.14
	99.93

These results are equivalent to : Metallic iron, 62.60 (or with the manganese added over 63.50) ; phosphorus, 0.008 ; sulphur, a slight trace. The Professor says :

This ore is of very good quality. It is rich in metallic iron, whilst holding traces only of sulphur and phosphorus. Titanium is entirely absent.

On lot 25, in the 12th concession of Galway, is an out crop of magnetite quite free from titanium and somewhat similar to the Swamp Lake ore. Lots 27, in the 13th and 14th concessions, Galway, contain several shows of magnetic iron ore, which run nearly 63 per cent. metallic iron, no titanium, and practically no sulphur or phosphorus. On another part of lot 27, in the 14th concession, is a large bed of magnetic pyrites. These Galway lots are all owned by a Toronto company, represented by Mr. Ledyard.

A deposit of magnetic iron occurs on lots 13 and 14 in the 18th concession, Galway, on the south side of the Monck road, about four miles east of Kinmount. This property belongs to Mr. D. W. Dumble, of Peterborough, who has done some exploratory work in stripping off the soil and exposing the ore.

A deposit of rich magnetic ore was discovered by Mr. Thomas O'Neill, of Galway, on lot 16 in the 16th concession of that township. It is now owned by Mr. A. F. McPherson, of Toronto. It carries 65 per cent. of iron, no titanium and practically no sulphur or phosphorus. Brown hematite has also been discovered by Mr. O'Neill on his farm, lot 16 in the 14th concession of Galway.

Sheriff Paxton, of Ontario county, has done considerable work in developing his mine on lot 5 in the 6th concession of Lutterworth, and has shipped some ore to the States. A letter from the Bethlehem Iron Company, of Bethlehem, Pa., says of the Paxton ore : "The analysis shows 60 per cent. metallic iron, very low in phosphorus, no titanium, no sulphur. Excellent Bessemer steel ore."

So far all the iron ores discovered in the townships of Snowdon and Galway are quite free from titanium, but this is not the case in some other townships. There is a large deposit of magnetic ore in the township of Minden, on the north shore of Kushog lake (lots 10 and 11 in the first concession), but according to Prof. Chapman's analysis, it contains over 20 per cent. of titanium. For a mile or more to the east occur out-crops of ore, but all are titaniferous.

On lots 33 and 34 in the 10th concession of Digby are extensive deposits of magnetite. Great blocks of ore stand out on the surface, but it contains about 10 per cent. of titanium.

In proximity to these deposits are generally tracts of hardwood from which charcoal could be obtained as cheaply as on any part of the continent : limestone for flux is plentiful, labor is cheap and many of the mines are easily accessible. These are important

advantages for the local manufacture of iron and steel. In the opinion of competent authorities a furnace, having its own ore property and being conveniently situated, should be able to obtain its ore at a cost of not more than $1.25 per ton. With the latest improvements in charcoal blast furnaces, seventy bushels of charcoal will smelt a ton of pig iron, the whole cost of which will not then be over $10 a ton. Even with iron at the very lowest, this leaves a large margin for profit. Then by adding Clapp-Griffith converters to the furnace, this pig iron can be converted into steel ingots at a cost of $4 a ton additional, making a marketable article of steel at a cost of $14, the present selling price of which is $35 per ton, and for which there is a large demand.

COPPER.

A large copper-lode has been discovered on Round lake, six miles north-east of the Huronian mine. It is a yellow copper and iron pyrites ore, carrying a fair percentage of silver. Little work has been done, but miners have gone in to commence operations. It is a very large lode and shows abundance of ore, but it has not yet been opened out properly. The vein is six to thirty feet wide, and has been traced a quarter of a mile. The owner and discoverer is Mr. Daniel McPhee, of Port Arthur.

ZINCBLENDE.

A mine of this mineral is located ten miles north of the White Sand river, which empties into Nepigon bay. It was discovered in 1880 by Donald McKellar, of Fort William. Specimens had been exhibited several years previously by Indians, but it was supposed to be iron ore. Mr. Peter McKellar tested the ore, made an examination of the mine and has traced up the several lodes. It is in a diorytic hornblende rock, belonging to the Huronian series. The ore is in great bodies of lenticular shape, some places eighteen feet in thickness. The vein opens and contracts and has been traced a quarter of a mile. In places on the foot wall there are ribs of pure copper ore one foot in thickness. Mr. T. A. Keefer, of Port Arthur, bonded the property in the summer of 1884, and has been mining on it since. Twenty men were employed in the season of 1885 and two shafts sunk in the solid ore, one to a depth of twenty-five feet, besides several test pits. It yields over fifty per cent. of zinc, and ore of that quality is worth $15 a ton.

LEAD.

The mine at Arnprior was worked only for a short time in the spring of last year. It was formerly the property of Mr. Balleau, of Montreal, but is now in the hands of James Robertson & Son, of Toronto. The lead smelting works at Kingston were also in operation for a short time only. The total quantity of galena smelted was 100,800 lbs., and the quantity of lead produced was 61,549 lbs., a percentage of 61.06.

ASBESTUS.

Asbestus, or mineral cotton, is found in considerable quantities in the townships of Elzevir, in Hastings, and Kaladar, in Addington. It is a species of hornblende with fibres flexible like flax, and is found in pockets throughout a considerable area of country in the townships named. No regular mining works are carried on excepting by farmers, who take it out in small quantities during the winter season. A mill for grinding the mineral was erected in the summer of 1883 in the village of Bridgewater, on a

tributary of the Moira. The works are carried on by Messrs. James & Taylor. Five or six men are employed in the mill, the capacity of which is twenty to twenty-five tons per day. The powder is put up in 100 lb. bags, and is sold to the trade at $15 per ton. Owing, however, to the limited market for this article the mill is not operated for a longer time than two or three months each year.

LITHOGRAPHIC STONE.

A fine quarry of lithographic stone is located on lot 7 of the 5th concession of Madoc. Its owners are Messrs. Gaujot & Co., of Belleville. It was discovered twenty years ago, when a quarry was being opened for building stone. The Presbyterian church in Madoc and other buildings in that village are constructed of it. It covers fourteen or fifteen acres, being capped with a layer of limestone, perfectly stratified, eight feet in depth. There are five or six layers of lithographic stone below the limestone, ranging from two inches to seven or eight inches in thickness. The depth of the stratum has not been ascertained. Samples of this stone have been sent to Montreal, Boston, Philadelphia and other places during the past year, and very favorable reports have been received as to its quality.

BUILDING STONE.

Chisholm's Quarry.—This is a quarry of brown sandstone and is situated at the Forks of the Credit, in the township of Caledon. It was opened in 1880. The stratum is about fourteen feet deep and covers an area of about fifty acres. During the past three years about fifty men have been employed on the works, one-fourth of whom are quarry men and the rest shippers and loaders, the average yearly output being about 50,000 cubic feet. Quarrymen are paid $1.50 to $2.00 per day, and laborers $1.00 to $1.25. The stone is of a very attractive color and its quality excellent ; it is hard, stands fire, and does not stain on exposure to the weather like the lighter colored varieties. Among the buildings into the construction of which this stone enters are the post offices at Hamilton, St. Thomas, Brockville and Barrie, and some of the most handsome stores and private residences in Toronto. Mr. Kenneth Chisholm, of Brampton, is the owner.

Plaunt's Quarry.—This quarry is in the village of Renfrew. The stone is a blueish grey, mottled, crystalline limestone, hard and durable. It is found in upright layers. The quarry was opened about fifteen years ago, when it was used in the construction of the Roman Catholic church in the village. It was used exclusively for building purposes until six years ago, when the property was leased by T. J. Sommerville, who began the manufacture of tombstones, monuments and cut stone. During the past year he took out 13,000 cubic feet, about one-third of which was made up into monuments, and considerable quantities have been shipped to the stone-cutters of western towns for the same purpose. Fourteen men were employed during the summer and seven in the winter, six of whom are stone-cutters. The wages of stone-cutters is $3 per day, and of quarrymen $1.25. Stone at the quarry is $4 per cord.

Jamieson's Quarry.—This quarry is in the township of Horton, on the Bonnechere Point road, a mile and a half north of Renfrew village, and is owned by Mr. John D. Jamieson. It is a good quality of limestone, but not quite so hard as the stone at Plaunt's quarry, nor does it take as fine a polish. It has been worked more or less for twenty years, Mr. Jamieson himself operating it in connection with a lime-kiln. Thomas Henderson, brickmaker and contractor, operated it during the past year, taking out about 6,000 cubic feet. He employs two stone-cutters in summer and four in winter, at wages ranging from $2 to $3 per day.

Arnprior Quarries.—These quarries are at Arnprior village, near the junction of the Mississippi and Ottawa rivers. The layers extend from the Chats falls on the Ottawa up to the Bonnechere river and seven or eight miles back from the Ottawa. The stone

is variously marked. At the Arnprior quarry it is a blue ground with dark clouded veins, while at the Ottawa valley quarry, one and a quarter miles distant, it has a grey ground with dark flowing veins. It is generally known as Arnprior marble, but the proprietor informed me that when exhibited at the Philadelphia, London and Paris exhibitions the judges classified it as granite. It is hard, takes a fine polish, and absorbs no liquid. Iron, oil or other substances produce no stain upon it. The pillars and arches of the House of Commons at Ottawa are specimens of the Arnprior quarry stone. A mill for the manufacture of the stone was erected about sixteen years ago by Farquhar, McLachlin, Hartney & Co., but in 1878 it passed into the hands of Robert McDonald & Son. The senior member of the firm died some time ago, and the business is now carried on by the son. The mill has a 35 horse-power engine, which drives three gangs of saws, five lathes, a rubbing bed and two polishing machines. The stone is cut in slabs and blocks from one-half an inch to seven feet in width, and ten feet in length. The mill runs from the first of April to Christmas each year, employing from twenty to twenty-two men. In the winter season fifteen men are employed at the quarries. From 18,000 to 20,000 cubic feet are taken out and worked up annually. Common mill hands are paid $1.15 per day ; lathe men, $1.50 ; cutters and polishers, $1.50 to $2.50 ; and quarrymen $1.25 per day.

Kennedy's Quarry.—This quarry, the property of Messrs. Kennedy & Sons, is situated on Waterloo avenue, in the city of Guelph, and was opened thirty-one years ago. It is a good quality of limestone of the Guelph formation, has many fossils and works freely whether dry or green. Thirty men are employed the year round, twelve of whom are stone-cutters earning $2.75 a day, and eighteen quarrymen earning $1.25. During the past year the post-offices and custom houses at Galt and Orangeville were constructed of this stone. Thirteen thousand cubic feet of cut stone were prepared during last year, at 65 cents per foot.

APATITE.

Work at the apatite mines was comparatively slack during the past season. Messrs. Richardson & Sons, of Kingston, who are the principal dealers in Ontario, shipped 1,150 tons, 400 of which were sent to Philadelphia and the rest to England. They worked the Brick Lake mine in Loughboro' and took out 100 tons. The lake Opinicon mines are worked by the farmers who own the land, and they took out during the past season 150 tons. At Sydenham 200 tons were taken out during the season, by farmers chiefly. The principal owner of these mines is Mr. James Foxton. A large mine was also worked at St. George's lake, lot 5 in the first concession of Bedford, owned by Capt. Boyd Smith. He employed thirty men during the summer and took out 550 tons before operations ceased in September. At the Otty lake quarries work was carried on throughout the year on lots 2, 5 and 6 in the 8th concession and 14 in the 6th concession of North Burgess. In the early part of the season six to eight men were employed and ten men in the latter part. Altogether 500 tons were taken up, but work was not pushed vigorously as the proprietors are making arrrangements for the forming of a strong company. The rate of wages at all of these mines is $1.25 per day, or $7 per ton. The average price was $13.50 per ton for high and low grades, the mineral yielding about 78 per cent. of pure phosphate.

GYPSUM.

The gypsum beds of Paris on the Grand river have been worked for nearly half a century. South of the town they are found on the west side of the river, and on the north of it on the east side, extending a distance of about four miles along the river. There are two beds of three or four feet in thickness, interstratified with 16 or 18 inches of shale. They lie about ten feet above the level of the river and sixty or seventy feet

below the table land. The quarries on the south side of the town have been worked during the past four years by Messrs A. S. Gill & Co., who also have a mill in the town for grinding rock into the plaster of commerce. This quarry has been worked for more than forty years and the tunnels have penetrated a distance of nearly 600 yards. Ten hands are employed on the works from October to May of each year—five miners, three mill hands and two teamsters. The average yearly product of the past four years is 1500 tons, which readily sells at $4 to $4.50 per ton at the mill. Owing, however, to its great weight and cheapness it will not stand the expense of shipment to any great distance for agricultural purposes, and the production is largely limited to the demands of the locality. The same company operate a quarry on the Jones tract, on the east side of the Grand river in North Cayuga, their average annual output being about 650 tons. The cost of quarrying at Paris is ninety cents per ton and in Cayuga ninety-five cents, the average wages of workmen being $1.25 per day.

A new industry has been established in connection with the gypsum works of this town—the manufacture of alabastine. This article is produced from rock gypsum found in the mine near Cayuga, on the Grand river. It is used for painting purposes and takes the place of kalsomine. It is claimed by the manufacturers that as a first coating under oil paint on wood, brick or any other outside surface where paint is used, the saving in expense will be fully one-half.

The deposits on the Grand river, below Caledonia, occur above Cayuga on the west bank of the river, while below the town where the river turns and flows south-east the beds occur on the north side. The deposits in workable thickness are confined to certain areas, having been formed it is supposed in ancient lake bottoms. The first bed, opened some forty years ago, was below Cayuga and operated by Messrs. John Brown, of Thorold, and Wm. H. Merritt, jr., of St. Catharines. Large shipments were made to the United States—to Cleveland, Detroit and other places; but on the discovery of the Michigan beds this trade was greatly reduced, although the Michigan gypsum is of inferior quality. This mine was worked in a small way on and off until it was reopened in 1879 by William Hamilton Merritt, who built a mill for grinding the rock. With much encouragement from the late Hon. George Brown the consumption of Canadian white land plaster in Ontario has been considerably increased in competition with the American gray, which comes over from Oswego, and which is very impure gypsum.

There is a mill on Gill & Company's property, nearer Cayuga, which was built by the late A. W. Thompson, and there are two above Cayuga, at Mount Healey and York, run by Donaldson & Bro. and Thomas Martindale respectively. At Caledonia Mr. Johnson (late N. Garland & Co.) grinds some land plaster.

The whole output along this lower part of the Grand river in land plaster and rock varies from about 4,000 to 5,000 tons per annum. The land plaster is sold in Ontario for the most part, the duty preventing much from being sent to the United States, while the rock, which is duty free, is chiefly shipped to that country.

Note—The following description of the Grand river beds is taken from Sir William Logan's Report of Progress of the Geological Survey of Canada (1863), pp. 762-3:—A large deposit of gypsum, which has been extensively wrought, occurs about three miles below the village of Cayuga, on the left bank of the Grand river, and is supposed to extend over at least sixty acres. The bed, which is five feet in thickness, and very pure, is in some places overlaid by thin beds of dolomite; but in most places it is covered only by clay and gravel. About five miles above this, which is known as Mr. Burrow's plaster-bed, gypsum is met with in Indiana, on the left bank of the river; and about four miles further up, near York, it occurs on both sides. On the right, near Mount Healey, is a very large bed of gypsum, three or four feet in thickness, which has been extensively wrought. About a mile and a half above York, on the left bank of the Grand river, is a mass of gypsum, seven feet in thickness, but divided by layers of dolomite. Occasional masses of gypsum imbedded in green shales are met with for two miles further up the river to Seneca. Twenty miles above, in the township of Brantford, gypsum is again found, extending over several lots and on both sides of the river. A bed of three feet in thickness is here wrought, and above this place gypsum is quarried at several places along the river as far as Paris. Near this town the mass of gypsum is divided into two portions of four or five feet in thickness by a bed of four feet of shale. The amount of gypsum annually raised from these quarries on the Grand river is about 14,000 tons, which is for the most part employed for agricultural purposes and is consumed in western Canada. The price of the crude gypsum at the mine is about $2 per ton; but when ground for use at the mills in the vicinity it is sold at $3.50 to $4. Much of the gypsum is white and pure and is well fitted for the purposes of cement and stucco. The quality which is used for this purpose sells when ground at from $5.50 to $7 per ton, and when calcined at about $16 per ton.

STATISTICS OF

THE WEATHER, AGRICULTURE, LABOR & WAGES,

EXPORTS AND IMPORTS, AREAS, ETC.

THE WEATHER.

TABLE No. I.—Showing for each month and the year the highest, the lowest, the mean highest, the mean lowest

	TEMPERATURE.	Goderich.			Windsor.			Simcoe.			Stratford.			Ham-
		1885.	1884.	1883.	1885.	1884.	1883.	1885.	1884.	1883.	1885.	1884.	1883.	1885.
		°	°	°	°	°	°	°	°	°	°	°	°	°
January.	Highest	45.7	42.3	41.1	47.3	48.9	44.3	48.9	44.8	41.4	47.9	44.0	41.2	53.8
	Lowest	—6.4	—10.5	—6.5	—15.0	—13.4	—11.7	—11.5	—35.5	—8.0	—21.8	—21.8	—20.6	—10.5
	Mean highest	22.9	22.3	24.1	26.8	25.2	27.1	24.9	24.5	26.4	21.4	21.7	26.1	29.7
	Mean lowest	11.5	9.8	11.2	7.7	9.0	9.6	9.8	7.3	9.9	5.8	4.1	4.2	9.6
	Monthly mean	17.2	18.8	17.6	16.9	17.4	18.3	18.0	16.3	18.2	14.6	13.9	14.2	19.4
Febru'ry.	Highest	38.4	47.5	51.4	45.0	57.9	57.5	38.9	50.8	57.0	37.6	46.3	48.1	42.8
	Lowest	—15.4	—9.0	—8.0	—20.6	—7.8	—5.2	—22.0	—10.5	—9.0	—25.0	—12.8	—18.4	—16.0
	Mean highest	18.9	29.8	22.7	23.5	31.0	31.0	21.4	34.3	30.0	19.2	30.1	26.7	25.3
	Mean lowest	0.4	16.1	11.8	0.0	15.9	13.0	2.4	16.4	11.6	5.8	12.1	6.3	0.8
	Monthly mean	9.7	21.9	18.9	11.4	26.5	22.0	10.1	25.0	20.8	7.4	21.0	16.5	13.5
March.	Highest	41.1	55.2	44.1	51.1	63.4	61.9	44.9	56.8	49.4	45.3	52.8	46.6	48.8
	Lowest	—14.9	—8.0	—1.0	—3.9	—1.2	—10.3	—15.0	—12.5	—7.0	—21.2	—23.0	—16.0	—9.5
	Mean highest	24.6	35.0	30.1	33.0	34.8	38.4	27.6	32.5	34.2	26.1	34.8	31.9	30.7
	Mean lowest	6.7	20.5	13.4	12.9	18.8	15.7	8.2	17.1	13.7	2.3	15.5	6.0	8.2
	Monthly mean	16.2	27.0	21.6	23.2	33.1	27.0	19.1	30.0	23.9	15.0	26.5	19.2	20.2
April.	Highest	79.1	73.0	80.3	83.9	70.8	86.0	77.7	71.8	75.8	80.0	72.2	77.5	79.8
	Lowest	16.7	25.0	13.0	18.4	24.7	19.3	19.0	22.0	15.0	12.0	19.3	2.0	15.8
	Mean highest	46.8	47.5	48.3	53.4	46.6	55.8	49.3	44.3	52.2	47.8	49.4	49.3	50.7
	Mean lowest	32.0	33.7	31.9	33.7	29.0	33.4	30.3	26.6	31.5	28.3	30.1	29.2	27.8
	Monthly mean	38.8	39.5	39.5	43.3	44.1	44.6	40.3	41.2	41.8	37 9	40.6	39.4	40.1
May.	Highest	82.1	78.3	77.5	85.9	87.3	80.5	77.7	80.8	78.8	81.0	78.2	76.5	82.8
	Lowest	25.6	33.0	34.0	27.8	32.2	30.3	32.0	28.0	24.0	22.0	28.1	28.9	23.0
	Mean highest	62.3	60.9	58.0	66.4	69.4	64.0	64.5	63.1	62.8	65.1	63.0	59.8	62.9
	Mean lowest	43.6	44.9	41.2	43.6	44.3	41.7	45.2	42.5	40.2	42.7	41.9	39.4	39.2
	Monthly mean	53.1	52.7	51.2	56.3	58.5	52.9	54.0	55.1	51.5	54.1	52.8	49.6	53.4
June.	Highest	83.7	86.1	82.5	88.8	93.1	88.1	80.0	88.8	85.8	83.0	86.9	85.0	87.8
	Lowest	40.6	50.0	36.0	41.2	47.8	37.4	39.9	41.3	34.9	37.8	44.5	33.2	36.1
	Mean highest	71.6	78.0	72.2	78.6	81.7	73.0	72.9	78.5	75.2	72.0	77.4	73.0	75.8
	Mean lowest	50.6	58.8	54.6	50.2	56.4	55.3	47.7	52.3	53.2	49.7	52.9	53.4	48.1
	Monthly mean	61.4	67.8	63.4	65.5	70.4	64.2	61.7	67.8	64.2	61.2	68.0	63.5	65.0
July.	Highest	89.2	85.7	84.4	93.2	90.7	91.1	86.7	85.8	85.0	86.0	86.2	86.7	93.8
	Lowest	46.3	45.0	45.0	49.3	45.8	49.2	42.9	42.8	43.8	42.1	43.0	42.5	42.2
	Mean highest	77.6	73.3	74.0	85.7	81.2	80.7	79.7	76.6	77.4	78.4	74.2	75.6	81.1
	Mean lowest	58.3	56.2	57.6	62.9	58.2	54.5	58.1	54.8	56.6	57.2	52.1	55.3	55.7
	Monthly mean	68.3	65.2	66.5	74.4	70.0	67.6	71.5	66.1	67.0	67.9	64.0	65.6	71.1
August.	Highest	84.4	91.3	86.7	89.0	94.0	93.5	82.0	88.3	87.8	82.4	90.0	85.0	87.4
	Lowest	42.3	46.5	48.1	43.5	40.6	48.4	42.0	39.9	39.8	40.3	36.6	41.5	42.2
	Mean highest	70.2	76.1	73.1	75.3	80.9	82.2	71.8	77.8	75.7	71.9	75.2	74.4	74.6
	Mean lowest	53.6	57.0	56.2	55.0	56.1	57.5	53.8	53.6	52.6	51.5	51.2	50.2	51.4
	Monthly mean	62.1	67.4	64.5	65.6	69.9	68.0	64.5	66.6	65.1	60.8	64.3	62.5	66.0
Septemb'r	Highest	84.1	90.2	77.3	87.5	93.1	88.1	80.0	87.8	79.8	81.3	88.9	79.7	88.8
	Lowest	37.8	38.9	35.0	41.2	38.6	33.8	37.0	29.9	29.0	35.0	28.6	29.4	35.1
	Mean highest	67.4	73.0	65.6	73.5	80.3	71.8	66.8	74.8	67.1	66.7	72.2	65.4	69.4
	Mean lowest	49.6	55.2	48.7	51.2	55.3	48.8	47.1	52.9	45.3	46.3	51.0	44.3	43.4
	Monthly mean	58.8	64.9	56.8	62.6	68.3	60.1	58.6	65.1	56.2	57.1	61.5	53.8	59.9
October.	Highest	75.3	74.3	76.8	78.8	87.3	77.8	71.0	79.8	85.9	75.2	78.4	76.5	72.8
	Lowest	21.1	28.6	27.0	21.6	23.1	28.5	22.0	23.9	30.0	15.0	22.5	24.2	17.8
	Mean highest	54.4	57.9	53.4	58.9	63.5	53.7	55.1	60.1	58.6	52.5	57.2	52.9	57.2
	Mean lowest	40.0	43.4	38.4	37.9	41.8	38.5	38.1	39.4	41.4	36.2	39.9	36.5	36.6
	Monthly mean	46.8	51.1	45.8	48.8	53.3	46.1	47.2	51.0	50.0	44.2	48.5	43.8	47.9
Novemb'r.	Highest	63.3	54.1	64.3	69.2	61.8	65.6	64.0	61.7	63.8	61.2	71.1	59.0	66.8
	Lowest	25.4	16.6	16.0	24.0	13.2	17.0	24.0	14.0	13.0	18.1	9.9	7.1	21.0
	Mean highest	43.2	40.4	45.1	46.8	45.5	49.6	46.3	43.4	47.7	41.6	44.3	43.1	47.3
	Mean lowest	33.9	29.7	33.0	33.0	27.3	32.0	34.1	26.9	30.9	34.7	25.3	28.4	29.2
	Monthly mean	39.0	35.4	38.5	40.4	36.2	40.5	39.3	35.2	40.9	36.9	32.7	36.1	40.4
Decemb'r.	Highest	47.2	58.7	51.9	51.6	55.9	56.9	49.0	54.9	53.8	45.8	58.1	49.2	50.8
	Lowest	6.5	—6.7	4.0	—1.0	—8.8	5.0	—2.0	—12.5	—2.0	—10.0	—17.0	2.3	1.7
	Mean highest	33.0	31.5	33.0	37.2	33.0	38.0	35.2	33.0	36.1	31.8	30.4	31.3	36.5
	Mean lowest	23.6	20.9	21.5	22.3	17.6	19.4	22.0	17.6	19.0	17.9	14.9	18.0	18.7
	Monthly mean	28.4	26.9	26.8	30.2	25.8	28.6	29.8	26.6	28.2	25.7	23.3	24.6	29.7
	Annual Mean	41.6	44.9	42.6	44.9	47.8	45.0	42.8	45.5	44.0	40.2	43.1	40.7	43.9

THE WEATHER.

and the mean temperature, as recorded at the principal stations in Ontario during the years 1883, 1884 and 1885.

ILTON.		TORONTO.			BARRIE.			PETERBORO'.			CORNWALL.			PEMBROKE.		
1884.	1883.	1885.	1884.	1883.	1885.	1884.	1883.	1885.	1884.	1883.	1885.	1884.	1883.	1885.	1884.	1883.
°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°
45.3	45.8	44.2	40.1	40.5	45.1	42.9	38.6	45.8	37.2	38.9	50.1	42.3	43.8	40.6	44.6	39.6
−23.0	−11.5	−16.1	−13.1	−7.8	−29.1	−32.1	−28.1	−21.0	−17.0	−22.9	−22.0	−31.3	−22.0	−25.4	−34.9	−34.0
25.9	28.5	24.3	23.1	25.1	23.0	22.1	22.4	23.6	20.5	23.8	23.9	16.8	19.1	18.0	16.0	18.8
5.6	6.9	9.9	7.6	9.3	3.9	−0.0	0.4	7.8	2.7	0.5	5.6	−2.0	−4.2	0.2	−9.1	−4.5
16.7	18.6	18.0	16.0	17.5	12.8	13.2	11.4	14.6	13.1	12.4	14.4	8.0	7.5	9.5	4.8	3.8
46.8	54.8	36.6	42.9	44.1	36.6	42.6	46.6	37.9	39.2	45.8	36.0	48.1	50.9	40.1	40.6	46.6
−10.5	−8.5	−14.9	−7.2	−10.5	−28.1	−9.3	−13.8	−22.0	−11.0	−18.9	−29.0	−6.3	−22.5	−28.2	−17.0	−32.0
35.0	31.6	19.1	30.7	27.4	17.9	29.5	25.8	19.7	25.8	24.8	16.1	27.4	22.6	18.9	24.8	22.5
13.9	11.7	0.0	15.7	11.3	−4.3	10.2	4.6	−4.7	7.8	4.3	−3.7	8.5	5.0	−7.5	2.8	−0.1
25.2	22.5	11.1	23.2	20.1	5.6	21.0	15.2	6.6	20.9	14.9	5.4	17.6	14.2	5.0	14.5	10.6
57.3	49.8	43.3	49.3	46.1	41.1	49.6	47.6	41.8	52.3	44.8	41.1	49.4	44.1	41.6	55.6	46.0
−10.0	−7.1	−8.4	−7.0	−5.8	−13.8	−18.9	−13.3	−14.0	−20.0	−10.9	−26.1	−18.6	−12.8	−28.7	−24.0	−16.4
41.2	34.8	27.1	35.1	31.2	23.2	33.5	30.5	26.1	32.5	30.3	23.5	33.1	28.0	25.9	34.8	27.8
21.5	11.8	9.2	20.5	11.8	2.1	16.1	5.7	5.1	14.9	6.3	3.1	16.0	5.9	2.8	13.5	0.5
30.7	24.6	18.4	28.0	21.9	14.1	26.6	18.1	15.3	27.5	20.7	13.7	24.8	16.6	10.8	24.3	15.5
75.2	79.7	67.3	67.8	64.6	73.6	67.6	63.6	82.6	72.3	63.7	82.0	71.8	72.1	83.6	76.1	74.0
25.0	8.8	17.8	25.1	11.9	12.6	16.8	4.1	13.0	25.0	5.0	10.8	24.7	17.6	9.3	21.2	−1.6
51.9	50.5	45.7	48.5	46.8	45.2	47.7	45.2	49.6	50.4	48.1	47.4	50.2	51.7	47.1	51.4	47.4
30.3	27.4	28.8	33.2	29.6	25.8	28.2	27.1	26.7	33.2	27.0	27.9	33.0	31.7	27.7	30.8	26.0
41.6	41.0	37.7	40.9	38.3	35.8	37.9	36.2	38.0	41.6	37.5	37.4	41.2	37.6	36.2	39.9	36.2
84.0	80.8	74.1	75.7	72.7	79.6	80.1	77.1	84.6	80.4	75.7	85.0	78.5	84.1	87.8	86.3	84.6
32.0	30.1	28.1	28.0	31.1	22.9	28.5	28.5	25.0	30.1	30.1	25.5	30.0	32.7	27.0	31.0	30.1
65.6	62.7	60.6	59.9	58.3	62.3	61.0	57.6	67.6	64.6	61.8	67.2	63.0	61.8	67.3	64.0	62.2
38.9	38.7	42.9	41.9	40.2	41.6	40.6	38.4	43.3	43.8	39.6	43.8	42.5	42.5	41.4	42.0	39.2
51.9	51.4	51.7	51.2	49.3	53.1	50.8	43.0	56.0	54.6	50.7	55.1	53.5	51.6	54.6	52.5	49.7
89.8	85.7	79.1	84.3	78.9	83.1	87.0	81.6	85.6	90.6	86.0	87.0	90.0	86.2	92.6	92.0	96.6
39.2	37.1	41.5	42.9	39.2	39.8	45.1	38.0	41.1	45.2	42.1	39.7	37.2	43.7	40.0	43.0	42.0
79.5	73.8	70.8	75.9	71.2	71.4	77.8	71.6	75.2	81.4	77.4	73.5	81.3	74.5	76.4	81.8	78.4
39.2	51.4	49.0	53.4	52.6	48.5	54.1	53.2	50.1	55.5	54.9	53.2	53.2	55.6	49.7	55.7	54.3
67.3	64.6	60.6	65.1	62.1	60.3	66.6	62.4	62.5	68.9	66.1	62.3	66.7	66.1	63.2	66.2	64.9
90.2	89.8	88.6	85.6	83.4	85.3	87.6	83.1	90.6	86.6	88.4	88.3	89.5	85.0	95.6	91.6	88.8
44.3	46.3	44.9	45.1	46.1	45.5	44.3	44.0	45.2	50.1	48.1	47.6	45.7	46.7	49.0	33.9	46.5
76.7	80.0	77.6	73.7	74.7	71.1	72.8	76.0	82.1	74.2	81.0	79.8	74.8	76.9	83.3	75.2	77.4
53.1	57.2	57.9	54.3	55.9	57.0	54.0	54.4	57.6	55.9	55.3	59.2	56.1	56.1	59.0	50.4	55.2
67.0	68.9	68.3	64.3	65.7	68.7	65.0	65.2	70.6	66.9	68.1	68.7	64.8	65.8	71.3	65.3	66.6
94.8	89.8	83.1	89.6	82.7	82.4	90.1	85.6	85.6	91.7	85.4	83.2	94.8	87.1	86.6	94.6	91.3
45.5	40.3	43.2	44.1	46.3	40.2	41.0	45.0	33.1	42.1	45.1	40.7	39.7	39.2	40.0	38.0	41.1
79.7	77.6	71.1	75.8	72.9	69.9	74.8	74.2	75.0	77.4	74.1	73.5	80.4	76.2	74.7	81.1	76.9
56.2	52.4	56.1	54.7	54.1	52.9	53.7	57.1	52.8	55.0	53.1	53.7	56.0	55.5	53.1	57.6	53.0
69.5	66.4	63.5	65.6	63.7	62.1	66.2	63.8	63.8	68.3	64.2	62.5	67.7	64.6	62.8	67.2	64.8
93.3	82.8	82.5	85.2	75.1	79.6	88.6	81.1	84.5	92.6	78.3	82.0	90.3	80.7	84.6	93.6	84.6
34.1	29.0	38.1	34.9	33.4	35.0	36.0	32.0	35.1	35.1	29.1	29.8	28.7	31.6	35.9	30.7	32.2
77.4	66.6	66.9	71.5	63.5	66.0	71.5	66.1	70.5	76.6	66.2	68.2	73.2	68.0	68.4	72.4	65.3
51.9	42.8	46.7	51.6	45.6	46.7	51.4	47.7	44.5	51.6	44.5	44.1	52.0	45.4	44.7	47.3	43.3
66.1	56.8	57.0	62.2	55.0	56.6	61.9	55.0	56.9	64.2	55.4	54.5	61.7	55.1	56.1	61.3	53.7
85.8	79.8	70.2	81.5	71.0	73.1	77.1	73.6	77.7	77.7	79.8	73.2	72.6	80.8	74.6	72.2	77.0
19.9	25.0	23.4	24.3	27.1	20.3	22.4	23.9	19.0	19.0	25.0	21.4	20.3	21.9	21.9	22.0	23.4
62.8	55.4	52.8	56.8	52.2	53.1	57.1	52.2	54.3	58.6	56.7	53.4	54.0	54.6	54.5	56.4	51.7
38.4	33.3	38.4	39.7	37.6	38.2	35.9	38.2	36.8	39.2	33.5	37.6	38.7	36.5	36.2	35.1	35.6
53.0	47.1	45.8	49.0	45.4	45.5	49.9	44.4	45.7	48.8	47.1	44.6	46.2	43.3	45.9	44.4	43.5
63.8	68.3	61.8	54.1	60.1	62.6	55.1	61.1	60.7	54.7	58.3	52.6	58.1	67.7	47.6	52.6	63.4
12.3	9.8	20.6	10.7	13.4	18.8	14.1	7.0	18.0	14.0	10.3	4.5	9.0	−1.0	11.2	9.4	4.0
45.8	50.5	43.9	40.5	44.6	41.4	40.4	43.4	42.3	41.0	42.8	38.4	39.6	43.9	38.9	38.3	41.5
26.8	28.6	32.4	27.3	29.7	30.2	27.2	28.0	30.2	24.7	29.2	29.4	24.2	26.5	28.8	22.6	25.4
36.7	40.6	38.6	34.1	37.9	37.3	32.9	35.6	37.0	32.5	36.8	33.9	31.9	35.2	34.1	24.4	32.4
55.8	55.3	43.6	50.6	48.7	43.5	52.1	48.0	44.8	51.7	44.2	47.1	55.0	51.6	47.4	51.6	47.8
−10.5	−1.0	−5.1	−13.3	−4.6	−5.1	−27.6	−9.1	−7.3	−23.0	−10.0	−2.0	−26.8	−25.5	−10.2	−33.9	−22.0
35.6	36.9	33.7	31.7	33.1	31.1	29.5	30.6	32.2	29.5	31.0	26.8	26.7	25.8	26.6	21.6	25.6
17.2	22.3	21.2	18.8	18.5	16.4	13.9	14.5	16.1	12.9	14.3	12.7	9.5	6.4	11.9	9.0	6.2
27.5	28.8	28.2	25.9	26.6	25.5	21.2	24.2	24.9	20.9	25.1	20.1	18.2	16.3	20.8	14.4	15.6
46.1	44.3	41.6	43.8	41.9	39.8	42.7	39.5	41.0	44.0	41.6	39.4	41.9	39.5	39.2	39.9	38.1

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TABLE No. II.—Monthly Summary of Sunshine at the principal stations in Ontario during the years 1883, 1884 sunshine, and the

Month.	Hours of Sun above horizon.	Windsor.			Woodstock.			Stratford.			St. Catharines.*			To-
		1885.	1884.	1883.	1885.	1884.	1883.	1885.	1884.	1883.	1885.	1884.	1883.	1885.
January	285.7	80.4	62.9	71.7	71.2	43.5	71.1	91.9	.....	68.4	.....	44.1	46.0	79.6
February	291.4	88.3	53.7	96.8	83.0	52.1	105.3	86.8	46.0	104.7	.....	42.6	52.0	100.7
March	369.9	150.2	128.0	150.1	145.2	157.0	162.2	107.8	154.2	164 1	.....	108.9	118.8	130.2
April	406.4	164.6	167.7	192.6	176.2	157.2	160.5	147.5	161.7	171.0	.....	114.4	154.3	206.7
May	461.1	189.4	196.0	198.2	201.2	170.3	172.7	153.0	140.2	184.7	.....	147.3	191.1	228.3
June	465.7	278.9	256.6	211.0	271.8	265.8	207.7	.....	289.8	226.5	.....	283.6	219.4	291.0
July	470.9	298.9	247.1	279.0	280.8	248.4	227.2	.....	248.1	249.5	.....	257.5	241.5	316.8
August	434.5	183.3	250.1	297.0	163.4	264.4	274.4	.....	183.3	299.9	.....	279.4	262.5	219.8
September	376.3	215.1	198.7	157.4	195.9	211.5	177.4	.....	150.2	181.4	217.2	.....	155.6	240.6
October	340.2	118.5	130.6	117.1	116.5	136.2	112.5	.....	92.7	113.6	118.2	.....	103.8	118.6
November	286.9	32.0	83.4	109.2	37.2	61.8	89.3	.....	63.0	71.9	39.8	49.7	79.4	49.4
December	274.3	48.5	37.5	60.8	41.7	48.0	50.9	.....	59.5	43.1	49.2	36.0	34.5	36.6
Totals	4463.3	1848.1	1812.3	1940.9	1784.1	1816.2	1811.2	.....	.....	1878.8	.....	.....	1658.9	2018.3

* During the summer of 1885 the recording instrument was removed from St.

TABLE No. III.—Monthly Summary of the average fall of Rain and Snow

Month.	West and South-West.								North-West and North.							
	Rain.				Snow.				Rain.				Snow.			
	1885.	1884.	1883.	1882.	1885.	1884.	1883.	1882.	1885.	1884.	1883.	1882.	1885.	1884.	1883.	1882.
	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.
January	1.02	0.32	0.49	1.44	17.2	23.1	16.2	9.5	1.99	0.42	0.21	1.08	30.5	47.5	42.7	20.4
February	0.78	2.02	2.16	1.66	12.0	10.6	17.4	4.3	0.09	0.49	1.68	0.69	14.0	21.5	39.5	11.7
March	0.49	1.64	0.18	2.74	8.4	6.4	27.4	13.1	0.23	1.07	0.17	1.96	19.6	7.6	18.7	16.4
April	1.56	1.24	1.60	1.56	8.5	2.9	2.6	0.7	1.23	1.01	1.36	1.62	9.3	3.0	3.9	1.5
May	2.50	3.11	4.96	4.77	0.9	S.	S.	S.	2.73	3.72	3.78	2.14	2.4	S.	S.	S.
June	3.15	2.19	4.96	3.77	....	....	....	....	3.12	1.40	5.67	3.08	.....	.....	.....	.....
July	2.70	3.55	5.71	1.50	....	....	....	....	2.53	2.41	4.02	1.65	.....	.....	.....	.....
August	5.40	1.94	1.55	4.05	....	....	....	....	4.36	1.42	1.98	2.80	.....	.....	.....	.....
September	2.80	2.05	2.70	1.74	....	....	....	....	3.48	3.45	3.32	2.58	.....	.....	.....	.....
October	3.44	3.58	2.25	1.86	S.	0.8	....	....	2.56	3.96	0.06	1.90	S.	4.0	.....	..
November	2.38	1.75	3.12	1.19	4.6	7.3	6.4	10.4	2.55	1.84	2.92	1.25	12.8	15.9	17.0	16.1
December	1.32	1.67	1.01	0.64	21.4	13.1	10.7	23.0	1.00	2.75	0.41	0.43	27.8	21.8	22.3	40.3
Totals	27.54	25.06	30.69	26.92	73.0	64.2	80.7	61.0	25.87	23.94	25.61	21.18	116.4	121.3	144.1	106.4

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and 1885, showing the number of hours the sun was above the horizon in each month, the hours of registered totals for the year.

RONTO.		BARRIE.			LINDSAY.			KINGSTON.			CORNWALL.			PEMBROKE.		
1884.	1883.	1885.	1884.	1883.	1885.	1884.	1883.	1885.	1884.	1883.	1885.	1884.	1883.	1885.	1884.	1883.
51.1	86.2	59.5	35.5	72.4	93.3	47.3	82.7	66.1	50.3	95.5	69.4	56.7	96.3	51.2	39.3	.....
52.2	129.7	73.1	40.8	75.7	108.1	56.9	110.2	117.2	52.5	119.6	123.8	60.2	107.2	.....	43.0	.....
159.7	191.6	130.1	138.9	146.5	159.6	177.6	190.9	138.4	152.5	191.6	168 9	154.2	181.8	166.9	153.2	.....
166.0	184.7	162.5	146.0	171.5	196.7	176.0	214.4	186.9	140.6	184.3	222.0	146.1	244.7	120.2	137.3	.....
209.3	184.0	210.0	182.1	168.2	237.6	194.2	200.6	235.1	173.8	218.8	281.4	178.3	210.1	208.6	185.9	151.9
320.4	241.5	267.6	270.8	205.5	286.3	299.4	253.2	276.0	239.5	244.7	250.7	299.7	230.9	216.2	272.3	.....
246.9	275.1	288.4	226.2	238.2	299.3	247.1	275.5	294.0	191.1	263.4	280.2	184.6	274.1	241.6	166.6	265.8
281.1	305.1	151.1	223.7	275.6	194.3	272.6	301.6	204.4	290.2	267.5	226.7	259.1	247.2	168.6	248.4	240.0
214.2	193 1	196.3	119.7	156.6	237.1	208.9	192.3	230.1	228.8	190.6	234.7	188.7	202.0	147.0	145.8	143.8
137.7	127.3	77.0	102.6	98.7	118.1	137.3	135.1	105.2	127.0	123.0	110.8	101.1	118.9	149.4	25.5	105.9
63.7	90.2	35.2	32.8	53.4	37.4	70.3	78.0	43.9	67.2	90.5	36.1	60.2	55.7	45.1	41.1	53.3
29.5	30.3	26.5	43.8	27.2	52.6	58.7	42.2	54.4	53.8	68.4	46.8	35.9	40.5	66.7	42.6	16.7
1931.8	2038.8	1677.3	1562.9	1689.5	2020.4	1946.3	2076.7	1951.7	1767.3	2057.9	2051.5	1724.8	2009.4	.....	1501.0	.....

Catharines to Niagara Falls, and placed in charge of Mr. Morden.

in the several districts of Ontario for the four years, 1882-5.

CENTRE.								EAST AND NORTH-EAST.							
Rain.				Snow.				Rain.				Snow.			
1885.	1884.	1883.	1882.	1885.	1884.	1883.	1882.	1885.	1884.	1883.	1882.	1885.	1884.	1883.	1882.
in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.
1.30	0.24	0.66	1.22	20.1	34.5	19.4	7.8	0.73	0.35	0.29	0.96	13.7	44.6	17.3	20.7
0.41	1.92	1.24	1.18	13.1	10.8	16.0	5.4	0.17	0.94	0.80	0.95	18.1	22.1	16.3	10.6
0.12	1.63	0.17	1.58	17.9	7.5	21.4	4.6	0.32	1.17	0.12	1.23	18.4	12.7	22.4	12.6
1.84	0.77	1.65	0.94	9.6	2.3	3.9	0.3	1.49	0.68	1.52	1.25	21.1	1.7	3.4	2.2
1.85	2.53	4.82	3.59	1.1	S.	S.	S.	2.11	2.40	4 87	2.94	2.8	S.	S.	S.
3.32	2.12	4.86	3.17	.....	.....	.....	.....	3.04	1.16	4.44	3.29	.....	.....	.....	.....
2.80	3.61	3.78	1.17	.....	.....	.....	.....	2 80	4.21	3.39	2.48	.....	.....	.....	.....
3.45	1.62	2.38	3.74	.....	.....	.....	.....	2.91	2.42	2.19	3.04	.....	.....	.....	.....
3.39	2.81	2.33	1.94	.....	.....	.....	.....	3.07	2.35	2.81	3.31	.....	.....	.....	.....
4.32	2.02	1.32	1.30	S.	0.4	.....	.....	2.77	2.27	2.06	1.33	S.	0.7	.....	.....
2.23	1,55	2.27	1.44	2.0	8.3	3.5	8.7	1.84	1.72	2.10	1.30	5.1	17.7	11.1	4.5
1.31	1.49	0.61	1.28	14.5	15.3	9.3	17.7	0.83	2.12	0.58	0.25	23.5	15.1	14.6	23.5
26.34	22.31	26.09	22.55	78.3	79.1	73.5	44.5	22.08	21.79	25.17	22.33	102.7	114.6	85.1	74.1

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TABLE No. IV.—Summary of the total fall of Rain and Snow, and of the number of days on which Rain and Snow fell in Ontario during the years 1884 and 1885 at Stations reporting for the whole year, and the averages for the Province.

Stations.	Observers.	Rain.				Snow.			
		1885.		1884.		1885.		1884.	
		Depth Inches.	No. of Days.	Depth Inches.	No. of Days.	Depth Inches.	No. of Days.	Depth Inches.	No. of Days.
Essex—									
Cottam	W. E. Wagstaff	32.23	105	26.78	88	56.8	45	54.6	42
Maidstone	T. F. Kane	34.51	99	25.47	85	49.8	25	.....	.....
Windsor	A. Sinclair, M.A	26.50	93	21.79	79	36.8	40	48.3	32
Kent—									
Blenheim	W. R. Fellowes	35.24	87	31.49	81	52.3	37	48.0	32
Dealtown	S. J. Pardo	30.35	98	26.13	92	45.4	40	34.9	41
Ridgetown	Thos. Scane, P.L.S.	31.27	95	26.92	97	60.3	56	44.2	47
Elgin—									
Aylmer	W. H. Draper	34.71	79	31.53	93	75.7	36	67.3	35
Cowal	Samuel Maccoll	26.01	61	27.67	69	60.4	34	48.9	27
Lyons	Wm. McCredie	31.58	89	27.70	91	54.1	36	50.9	34
Port Stanley	M. Payne	28.64	114	22.40	114	67.9	81	46.2	61
St. Thomas	S. Williams	28.06	93	27.91	102	69.6	62	51.2	43
Norfolk—									
Port Dover	H. Morgan	23.52	124	17.06	70	66.7	77	44.7	31
Simcoe	D. S. Patterson, B.A.	24.15	74	17.06	70	48.1	47	44.7	31
Lambton—									
Birnam	J. S. Mellor	25.21	88	21.91	91	109.5	66	93.6	47
Oil Springs	Alex. Smyth	27.02	73	25.37	92	65.1	32	35.7	34
Sarnia	Wm. Mowbray	23.20	68	22.83	85	69.0	35	45.7	50
Thedford	Martin Wattson	23.00	82	22.40	95	70.0	60	64.6	35
Watford	D. Ross	26.73	50	25.06	75	.....	.....	.....	.....
Huron—									
Goderich	H. J. Strang, B.A.	25.50	115	22.71	114	82.7	91	60.4	79
Goderich L. House	G. N. Macdonald	23.77	110	23.10	112	131.2	82	122.2	85
Zurich	G. Hess	25.34	81	24.33	89	102.3	53	80.6	44
Bruce—									
Lucknow	M. McDonald	28.05	101	.....	.....	141.1	112	.....	.....
Point Clark	John Kay	22.64	47	.....	.....	95.0	92	.....	.....
Saugeen	Mrs. K. Stewart	23.12	95	20.66	99	143.8	95	134.7	77
Grey—									
Bognor	C. H. Henning	31.06	62	29.48	76	146.5	45	167.8	70
Owen Sound	John McLean	24.95	69	23.25	71	126.3	55	167.0	57
Presqu' Isle	John McKenzie	24.89	75	26.67	77	156.6	77	150.3	64
Simcoe—									
Barrie	H. B. Spotton, M.A.	20.47	66	16.93	70	94.1	72	86.5	69
Coldwater	Jas. N. Lazonby	27.15	61	29.61	68	157.2	45	165.0	50
Orillia	H. A. Fitton	19.90	89	17.68	105	132.5	98	152.9	80
Middlesex—									
Ailsa Craig	John Rennie	27.25	59	23.14	65	68.0	31	67.0	30
Delaware	A. Francis, M.D.	31.61	111	27.83	108	60.5	37	50.5	31
Granton	James Grant	30.45	86	25.34	100	90.9	79	85.2	69
London	E. B. Reed	27.96	80	29.11	94	126.6	50	123.5	48
Putnam	Wm. Uglow	32.53	73	27.14	89	57.6	58	55.9	50
Wilton Grove	Henry Anderson	28.62	59	26.56	61	58.0	31	46.4	37
Oxford—									
Otterville	Thomas Wright	29.73	69	28.91	80	64.4	36	59.8	29
Princeton	David Beamer	32.88	90	30.32	96	64.5	44	75.2	43
Woodstock	N. Wolverton, B.A.	31.61	82	27.60	90	62.7	64	109.1	45
Brant—									
Brantford	T. M. McIntyre, M.A	19.66	63	.....	.....	34.5	23	60.5	17
Paris	John Kay	30.99	79	.....	.....	52.2	35	.....	.....
St. George	Dr. Kitchen	32.92	96	22.31	91	78.2	47	79.7	38
Perth—									
Listowel	Alex. McKay	26.81	88	26.90	106	130.0	79	105.7	66
Stratford	Wm. McBride, M.A.	30.02	87	33.55	81	111.8	76	113.9	52
Wellington—									
Fergus	A. D. Ferrier	31.56	104	27.33	127	93.9	80	112.5	74

TABLE No. IV.—THE WEATHER—*Continued.*

Stations.	Observers.	Rain.				Snow.			
		1885.		1884.		1885.		1884.	
		Depth Inches.	No. of Days.	Depth Inches.	No. of Days.	Depth Inches.	No. of Days.	Depth Inches.	No. of Days.
Waterloo—									
Conestogo	G. A. McIntyre	27.43	84	33.73	111	85.8	81	129.6	69
Dufferin—									
Orangeville	N. Gordon	28.79	86	23.00	90	77.4	35		
Wentworth—									
Copetown	John Ireland	28.78	90	23.83	87	70.3	61	86.7	49
Hamilton	Geo. Dickson, B.A.	24.85	76	23.85	81	67.1	40	94.0	41
Stoney Creek	C. F. Van Wagner	32.67	97	20.80	98	52.0	28	70.0	36
Halton—									
Georgetown	J. Barber	28.81	121	23.82	136	80.6	92	88.7	86
York—									
Aurora	J. E. Armstrong	20.93	71			63.5	48		
Georgina	Capt. Sibbald, R.N.	18.87	101	19.26	105	92.4	82	109.0	81
Scarboro'	R. Martin	25.79	99	22.77	84	49.0	68	58.4	54
Toronto	Observatory	26.35	103	20.53	123	65.6	73	80.2	69
Ontario—									
Oshawa	Rev. J. Middleton	23.53	68	26.05	90	55.0	30	76.9	40
Lennox & Addington									
Denbigh	James Lane	24.89	62	21.65	63	134.8	36	112.4	54
Frontenac—									
Harrowsmith	John Donnelly	27.43	79	24.96	73	78.1	44	87.0	33
Kingston	A. P. Knight, M.A.	30.80	117	24.59	110	112.4	83	121.4	70
Leeds & Grenville—									
Prescott	C. Chapman	23.79	86			170.8	62		
Stormont—									
Cornwall	James Smith, M.A.	25.36	107	23.90	114	103.7	32	102.9	90
Carleton—									
Ottawa	A. McGill, M.A.	20.87	82	22.35	108	137.4	56	99.7	56
Renfrew—									
Northcote	F. Kosmark	15.81	54	15.65	72	91.5	41	70.5	34
Pembroke	E. Odlum, M.A.	27.39	61	21.01	80	99.0	47	98.4	47
Renfrew	W. E. Smallfield	16.56	77	13.54	75	114.8	49	86.0	39
Rockliffe	W. H. McIntyre	18.32	88	22.60	106	106.8	83	113.7	69
Lanark—									
Oliver's Ferry	A. E. Hume	29.71	53	25.37	71	100.3	33	99.7	41
Victoria—									
Bobcaygeon	John Stewart	24.73	86	23.72	80	76.9	56	92.0	38
Lindsay	Thos. Beall	19.00	89	22.01	98	104.0	69	124.2	48
Peterborough—									
Burleigh	Wm. McIllmough	10.83	44			78.7	43		
Ennismore	Thomas Tellford	26.89	92	20.52	79	86.4	50	75.4	42
Lakefield	S. Sheldrake	17.70	83	17.80	80	102.4	48	119.0	47
Norwood	Rev. J. Carmichael	24.03	77			53.2	37		
Peterborough	Wm. Tassie, M. A.	23.66	105	25.42	93	78.5	57	84.2	51
Hastings—									
Bancroft	J. Cleak	20.24	80	19.60	88	119.1	62	128.4	55
Deseronto	Messrs. Rathbun	26.71	104	23.57	89	86.4	56	123.1	52
L'Amable	Benjamin Spurr	23.00	82	20.93	85	111.0	57	109.5	54
Shannonville	John Kemp	25.56	69			94.4	40		
Trenton	W. G. Clarke	26.14	73			81.9	41		
Muskoka—									
Bala	E. B. Sutton	23.74	110	24.17	106	128.1	94	136.7	79
Beatrice	John Hollingworth	27.86	82	26.31	102	162.5	75	216.3	60
Charlinch	C. J. Tisdall	28.33	108	25.11	101	173.6	104	141.5	74
Gravenhurst	T. M. Robinson	23.24	89	23.30	93	128.6	81	120.9	68
Parry Sound—									
Parry Sound	Rev. R. Mosley	27.33	96	24.94	98	130.7	96	95.0	76
Spencedale	A. McKenzie	22.09	56			131.4	49		
Algoma—									
Port Arthur	Wm. Cooke	14.93	49	19.28	58	39.1	27	64.8	40
Average for the Province		26.01	83.8	24.11	90.2	90.6	56.8	91.4	51.6
Average of two Years		25.06	87.0			91.0	54.2		

THE WEATHER.

TABLE No. V.—Comparative Meteorological Register for the nine years 1877-85, as recorded at Toronto Observatory in Latitude 43° 39′ .4 North, and Longitude 5h. 17m. 35s. West.

	1885.	1884.	1883.	1882.	1881.	1880.	1879.	1878.	1877.
	°	°	°	°	°	°	°	°	°
Average temperature	41.57	43.79	41.95	45.42	46.06	45.43	44.16	47.09	46.10
Difference from average (45 years)	−2.60	−0.38	−2.22	+1.25	+1.89	+1.26	−0.01	+2.92	+1.93
Thermic anomaly (lat. 43° 40′)	−9.45	−7.23	−9.07	−5.60	−4.96	−5.59	−6.86	−3.93	−4.92
Highest temperature	88.6	89.6	83.4	89.9	92.7	89.9	89.5	95.4	88.7
Lowest temperature	−16.1	−13.3	−10.5	−17.4	−15.1	−8.3	−8.9	−9.0	−13.9
Monthly and Annual Ranges	104.7	102.9	93.9	107.3	107.6	98.2	98.4	104.4	102.6
Average daily range	16.85	17.05	17.07	15.70	16.61	15.96	17.10	15.11	16.19
Greatest daily range	39.2	34.8	38.4	36.0	40.9	30.8	34.1	28.6	33.2
Average height of Bar. at 32° Fah.	29.5933	29.6273	29.6496	29.6515	29.6311	29.6359	29.6353	29.5647	29.6346
Difference from average (44 years)	−.0245	+.0095	+.0318	+.0337	+.0133	+.0181	+.0175	+.0531	+.0168
Highest barometer	30.300	30.412	30.365	30.447	30.461	30.323	30.319	30.123	30.352
Lowest barometer	28.714	28.807	28.803	28.781	28.911	28.800	28.948	28.607	28.712
Monthly and Annual Ranges	1.586	1.605	1.562	1.666	1.550	1.523	1.371	1.516	1.640
Average humidity of the air	77	76	77	74	75	77	76	77	74
Average elasticity of aqueous vapour	0.249	0.261	0.249	0.265	0.283	0.260	0.267	0.293	0.272
Average of cloudiness	0.61	0.63	0.64	0.63	0.62	0.62	0.63	0.62	0.60
Difference from average (31 years)	−0.01	+0.01	+0.02	+0.02	0.00	0.00	+0.01	0.00	−.02
	°	°	°	°	°	°	°	°	°
Resultant direction of wind	N 62 W	N 55 W	N 77 W	N 47 W	N 50 W	S 80 W	N 72 W	N 63 W	N 62 W
" velocity of the wind	2.60	3.30	2.39	2.11	2.70	2.86	3.18	2.25	1.80
Average velocity (miles per hour)	9.95	10.29	10.08	10.42	9.91	10.54	10.36	8.32	8 33
Difference from average (10 years)	+0.33	+0.67	+0.46	+0.80	+0.29	+0.92	+0.74	−1.30	−1.29
Total amount of rain	26.351	20.532	25.734	20.587	21.138	30.922	22.515	43.390	21.885
Difference from average (45 years)	−0.981	−7.200	−1.998	−7.145	− 6.594	+3.190	−5.217	+15.658	−5.847
Number of days rain	103	123	124	110	123	140	107	132	116
Total amount of snow	65.6	80.2	84.0	42.5	57.6	44.0	68.5	51.0	37.3
Difference from average (42 years)	−4.32	+10.28	+14.08	−27.42	−12.32	−25.92	−1.42	−18.92	−32.62
Number of days of snow	73	69	74	62	64	78	79	56	54
Number of fair days	203	184	181	209	191	163	188	202	204
Number of Auroras observed	31	20	46	60	23	23	9	7	13
Possible to see Aurora (No. of nights)	195	202	207	204	187	198	191	195	206
Number of Thunderstorms	19	30	32	28	24	47	37	30	33
Number of Fogs	30	42	28	32	23	37	43	27	37
Number of hours Sunshine	2018.3	1931.8	2038.8	2169.5	.....	.....	.....	.....	.....
No. of hours of possible Sunshine	4463.3	4474.4	4463.3	4463.3	.....	.....	.....	.....	.....

WHEAT, BARLEY, OATS AND RYE.

TABLE No. VI.—Showing by County Municipalities and groups of Counties the area and produce of Fall Wheat, Spring Wheat, Barley, Oats and Rye in Ontario in the year 1885.

COUNTIES	Fall Wheat.		Spring Wheat.		Barley.		Oats.		Rye.	
	Acres.	Bushels.	Acres.	Bushels.	Acres.	Bushels.	Acres.	Bushels.	Acres.	Bushels.
Essex	28,087	684,761	2,707	39,766	2,257	62,654	28,141	1,118,042	1,367	29,049
Kent	59,717	1,530,547	5,634	87,665	3,978	115,163	32,923	1,359,391	545	16,350
Elgin	38,999	885,667	5,578	78,427	3,543	104,235	31,546	1,206,319	1,226	16,710
Norfolk	32,549	764,902	2,037	31,064	4,215	122,614	26,465	992,438	6,416	97,523
Haldimand	31,856	795,126	5,412	73,756	12,136	349,395	21,723	802,230	342	5,558
Welland	21,806	458,798	4,256	48,816	4,281	107,796	17,219	559,962	1,084	20,235
Totals	213,014	5,119,801	25,624	359,494	30,410	861,857	158,017	6,038,382	10,980	185,425
Lambton	28,743	810,553	15,473	226,215	11,977	365,179	38,183	1,473,864	248	4,299
Huron	59,193	1,527,179	41,465	341,257	17,550	494,559	69,877	2,632,965	135	2,025
Bruce	45,269	1,014,026	22,048	248,040	14,623	410,029	55,249	2,042,003	71	1,775
Totals	133,205	3,351,758	78,986	815,512	44,150	1,269,767	163,309	6,148,832	454	8,099
Grey	22,783	445,635	51,584	450,328	21,625	526,353	76,182	2,501,817	312	7,020
Simcoe	54,602	1,378,700	44,360	420,089	19,961	528,967	58,433	1,937,054	1,167	23,340
Totals	77,385	1,824,335	95,944	870,417	41,586	1,055,320	134,615	4,438,871	1,479	30,360
Middlesex	60,401	1,420,028	35,390	440,606	9,147	252,823	68,122	2,570,924	349	6,980
Oxford	33,319	814,316	22,711	264,583	11,401	345,678	49,717	1,915,099	705	10,575
Brant	30,275	639,711	3,440	32,818	14,413	463,090	18,596	677,638	725	10,331
Perth	40,568	1,115,620	27,732	190,796	12,087	347,501	49,885	1,961,478	187	3,179
Wellington	26,558	630,487	31,460	253,568	27,228	765,651	65,129	2,420,845	563	8,445
Waterloo	38,897	976,704	11,941	103,767	11,652	370,417	33,708	1,320,005	455	7,887
Dufferin	12,945	282,072	22,272	205,125	9,578	273,643	26,109	988,487	451	4,510
Totals	242,963	5,878,938	154,946	1,491,263	95,506	2,818,803	311,266	11,854,476	3,435	51,907
Lincoln	21,009	543,082	4,542	56,957	3,216	91,302	17,573	658,988	219	4,034
Wentworth	31,409	798,417	4,775	64,176	9,988	320,115	26,388	1,061,061	214	3,700
Halton	23,025	602,795	5,770	56,546	8,971	280,523	17,520	689,587	46	805
Peel	29,600	908,720	14,464	184,271	27,166	910,061	27,944	1,116,363	611	10,692
York	39,578	1,065,440	32,330	378,261	45,942	1,416,392	59,890	2,286,001	692	11,072
Ontario	9,921	249,017	53,583	579,768	29,204	801,066	46,895	1,642,732	1,562	23,992
Durham	2,640	61,670	48,808	511,020	37,843	1,061,875	31,957	1,103,475	2,517	31,790
North'mberl'd	9,699	235,977	36,363	353,448	38,344	1,043,340	29,614	915,369	8,018	115,700
P. Edward	1,903	40,344	11,729	113,419	36,470	796,140	13,487	365,228	7,186	117,994
Totals	168,784	4,505,462	212,364	2,297,866	237,144	6,720,814	271,268	9,838,804	21,065	319,779
Lennox & Ad.	2,293	38,981	8,774	106,604	35,852	854,353	23,121	741,722	3,810	53,035
Frontenac	2,292	48,430	10,984	164,760	16,263	425,277	24,699	790,368	2,406	42,514
Leeds & Gren.	5,070	102,820	14,329	281,278	8,155	220,185	62,069	2,165,587	3,923	64,180
Dundas	718	8,408	5,897	123,188	5,742	165,886	29,350	1,229,472	1,468	28,626
Stormont	492	7,710	4,530	93,998	1,994	55,832	24,749	822,904	371	3,710
Glengarry	420	8,274	8,749	164,481	1,380	34,500	30,725	1,190,594	2	40
Prescott	52	936	7,970	114,529	2,024	41,998	26,973	805,684	241	4,820
Russell	78	897	4,240	78,143	1,301	31,224	19,098	564,728	91	1,820
Carleton	718	10,318	22 981	403,546	5,758	177,692	57,141	1,978,793	4,472	75,353
Renfrew	269	4,412	26,238	431,353	1,148	30,491	39,603	1,285,513	6,093	117,900
Lanark	2,962	63,535	16,548	261,127	2,554	79,174	37,728	1,290,675	2,643	54,631
Totals	15,364	294,721	131,240	2,223,007	82,171	2,116,612	375,256	12,866,040	25,520	446,629
Victoria	7,708	184,530	36,328	353,108	24,866	632,094	37,828	1,152,619	768	12,419
Peterborough	9,048	179,241	31,478	256,231	11,567	275,757	30,616	965,935	2,474	40,005
Haliburton	34	381	1.297	15,784	338	8,459	4,286	121,422	187	2,693
Hastings	7,307	132,476	22,375	310,341	28,030	723,735	40,530	1,310,335	11,349	164,560
Totals	24,097	496,628	91,478	935,464	64,801	1,640,036	113,260	3,550,311	14,778	219,677
Muskoka	79	1,738	1,651	22.404	655	13,428	7,948	209,986	305	4,767
Parry Sound	80	1,600	1,803	33,049	780	18,525	5,262	182,434	225	4,005
Algoma	165	3,300	5.427	81,405	670	18,425	3,544	101,606	52	858
Totals	324	6,638	8,881	136,858	2,105	50,378	16,754	494,026	582	9,630
Province:										
1885	875,136	21,478,281	799,463	9,129,881	597,873	16,533,587	1,543,745	55,229,742	78,293	1,271,506
1884	864,740	20,717,631	721,647	14,609,661	700,472	19,119,041	1,481,828	57,696,304	103,416	1,648,259

Note—In this and following tables organized townships only are included in Muskoka, Parry Sound and Algoma for 1885.

PEASE, CORN, BUCKWHEAT, BEANS, AND HAY AND CLOVER.

TABLE No. VII.—Showing by County Municipalities and groups of Counties the area and produce of Pease, Corn, Buckwheat, Beans, and Hay and Clover in Ontario in the year 1885.

COUNTIES.	Pease.		Corn.		Buckwheat.		Beans.		Hay and Clover.	
	Acres.	Bushels.	Acres.	Bushels.	Acres.	Bushels.	Acres.	Bushels.	Acres.	Tons.
Essex	3,748	67,801	32,062	2,301,731	953	30,973	694	22,555	38,796	69,057
Kent	10,670	231,646	26,397	1,762,528	991	23,536	14,201	262,719	54,982	93,469
Elgin	12,640	282,504	14,341	1,061,234	1,361	28,037	1,182	27,186	50,217	80,849
Norfolk	16,062	321,240	12,240	834,523	4,654	99,285	644	10,089	40,405	56,163
Haldimand	12,395	243,066	1,129	70,246	541	8,007	94	1,410	50,477	74,201
Welland	4,772	82,556	5,525	347,744	1,636	38,446	651	8,658	46,055	67,240
Totals	60,287	1,228,813	91,694	6,378,006	10,136	228,284	17,466	332,617	280,932	440,979
Lambton	9,605	216,977	6,368	413,283	541	12,443	450	9,581	54,876	92,740
Huron	30,942	790,878	1,276	104,207	253	5,376	116	2,900	93,028	145,124
Bruce	35,923	884,783	487	32,872	227	3,859	111	2,442	79,597	96,312
Totals	76,470	1,892,638	8,131	550,362	1,021	21,678	677	14,923	227,501	334,176
Grey	43,152	956,248	257	15,420	369	7,380	135	2,025	116,709	131,881
Simcoe	31,674	673,073	638	31,800	229	4,580	101	2,020	73,884	84,228
Totals	74,826	1,629,321	895	47,220	598	11,960	236	4,045	190,593	216,109
Middlesex	21,598	461,549	9,164	642,580	429	9,009	336	6,552	91,902	154,395
Oxford	15,906	386,198	7,029	456,885	729	14,580	206	5,150	64,076	107,648
Brant	9,429	205,081	3,866	265,788	725	16,131	325	4,956	31,425	47,138
Perth	21,556	561,965	459	32,130	159	3,657	31	620	67,690	106,273
Wellington	37,181	896,434	375	26,250	34	748	43	645	80,964	132,781
Waterloo	14,255	364,642	1,023	54,986	142	2,840	29	580	42,115	61,909
Dufferin	11,375	248,658	67	4,690	118	2,360	6	120	34,115	46,738
Totals	131,300	3,124,527	21,983	1,483,309	2,336	49,325	976	18,623	412,287	656,882
Lincoln	4,954	93,878	5,813	397,202	507	11,027	169	3,380	40,722	68,006
Wentworth	10,469	241,310	3,852	277,344	773	19,325	91	1,820	45,226	71,005
Halton	11,574	251,156	804	45,563	150	1,800	38	760	34,307	55,577
Peel	14,362	312,374	266	18,620	262	5,895	31	744	38,157	56,854
York	28,324	606,700	1,009	80,720	80	1,600	173	4,325	75,354	103,235
Ontario	24,241	524,818	1,902	76,080	210	4,200	191	4,775	52,274	77,366
Durham	19,679	406,371	1,577	67,291	1,019	20,380	316	6,162	43,467	59,115
Northumberland	19,251	343,053	3,503	129,611	4,505	93,839	364	7,400	54,585	73,690
Prince Edward	10,662	264,737	5,149	172,492	6,475	184,991	264	6,204	32,994	54,110
Totals	143,516	3,044,397	23,875	1,264,923	13,981	343,057	1,637	35,570	417,086	618,958
Lennox & Add	9,778	189,498	1,834	100,870	2,164	58,796	91	1,426	44,928	67,841
Frontenac	11,165	206,106	1,803	99,165	1,333	37,764	366	11,591	62,340	86,029
Leeds & Gren	6,127	123,888	4,358	202,342	5,632	147,840	386	6,689	108,729	188,101
Dundas	1,938	35,136	1,380	69,000	1,599	54,366	120	2,400	35,378	60,496
Stormont	2,725	50,876	1,102	66,120	2,336	70,080	84	3,360	31,292	50,067
Glengarry	7,000	124,600	661	33,050	618	17,922	48	1,200	32,855	45,011
Prescott	11,698	162,251	1,378	67,756	2,025	44,550	592	13,024	29,809	29,809
Russell	3,997	70,627	407	16,280	768	13,824	266	7,315	19,345	18,184
Carleton	13,204	265,797	1,145	77,288	3,926	104,039	471	12,717	58,211	72,751
Renfrew	22,168	413,433	473	18,920	1,457	38,319	397	14,954	58,721	39,147
Lanark	11,923	305,706	1,151	46,040	6,157	159,282	185	3,885	61,280	92,533
Totals	101,723	1,947,918	15,692	796,831	28,015	746,782	3,006	78,561	542,888	749,969
Victoria	16,237	317,596	450	22,500	369	3,690	47	940	39,401	46,099
Peterborough	16,472	321,204	525	27,563	842	18,735	315	3,150	41,244	43,306
Haliburton	1,599	26,112	131	6,550	344	3,440	47	940	9,467	9,467
Hastings	16,199	310,049	4,175	153,097	3,576	91,939	184	5,520	65,968	91,036
Totals	50,507	974,961	5,281	209,710	5,131	117,804	593	10,550	156,080	189,908
Muskoka	2,871	55,985	195	6,500	258	4,902	38	1,235	20,586	22,233
Parry Sound	1,349	26,832	28	1,680	247	5,558	17	340	10,179	10,891
Algoma	3,232	80,800	57	2,850	53	1,325	5	100	9,959	12,050
Totals	7,452	163,617	280	11,030	558	11,785	60	1,675	40,724	45,174
Province '85.	646,081	14,006,192	167,831	10,741,391	61,776	1,530,675	24,651	496,564	2,268,091	3,252,155
Province '84.	570,928	13,691,607	174,560	12,935,889	65,836	1,484,570	24,878	592,044	2,193,369	3,044,912

ROOTS, PASTURE AND BUTTER.

TABLE No. VIII.—Showing by County Municipalities and groups of Counties the area and produce of Potatoes, Mangel-wurzels, Carrots and Turnips, the area of Pasture in 1885, and the quantity of Butter made in 1884.

COUNTIES.	Potatoes.		Mangel-wurzels.		Carrots.		Turnips.		Pasture.	Butter made, 1884
	Acres.	Bushels.	Acres.	Bushels.	Acres.	Bushels.	Acres.	Bushels.	Acres.	Pounds.
Essex	3,024	310,656	270	108,000	89	32,819	294	107,800	62,457	586,410
Kent	3,503	356,885	288	163,541	152	63,840	367	183,500	89,292	811,471
Elgin	2,751	189,598	267	125,490	140	44,645	253	89,562	74,624	559,216
Norfolk	3,478	237,651	153	68,212	90	27,975	608	232,730	50,528	490,144
Haldimand	1,907	227,772	102	38,760	76	25,080	50	13,333	39,206	707,981
Welland	2,683	217,430	135	60,000	63	23,850	92	41,400	32,216	590,379
Totals	17,346	1,539,992	1,215	564,003	610	218,209	1,664	668,325	348,323	3,745,601
Lambton	3,156	299,283	294	116,665	152	47,880	174	47,960	88,689	673,043
Huron	5,380	955,488	1,205	578,400	406	203,812	6,915	2,808,112	140,784	1,492,245
Bruce	4,955	913,355	328	201,868	199	92,867	5,650	3,077,216	98,469	1,071,560
Totals	13,491	2,168,126	1,827	896,933	757	344,559	12,739	5,933,288	327,942	3,236,848
Grey	7,436	1,418,045	235	121,417	505	221,887	8,983	4,096,787	138,009	1,898,060
Simcoe	6,914	1,269,894	738	326,831	574	213,201	3,171	1,407,131	76,948	1,196,766
Totals	14,350	2,687,939	973	448,248	1,079	435,088	12,154	5,503,918	214,957	3,094,823
Middlesex	5,852	421,344	1,195	500,406	458	130,965	1,579	514,896	182,945	1,259,363
Oxford	3,351	203,640	944	411,924	287	91,318	5,112	1,905,396	103,255	616,022
Brant	2,382	276,574	396	247,500	206	104,471	2,491	1,314,003	34,402	518,122
Perth	3,970	466,475	1,465	763,895	452	192,100	5,014	1,591,945	89,555	920,638
Wellington	6,154	801,620	786	318,000	205	72,176	13,293	5,339,399	93,601	1,161,324
Waterloo	3,033	453,585	374	164,560	253	101,903	5,140	1,773,300	37,477	724,992
Dufferin	3,521	504,136	210	84,000	124	43,400	2,502	771,450	34,960	476,425
Totals	28,263	3,127,374	5,370	2,490,285	1,985	736,333	35,131	13,210,389	576,195	5,676,886
Lincoln	1,735	154,294	202	78,107	97	32,773	180	54,643	30,464	671,195
Wentworth	3,359	505,362	473	253,055	220	95,823	2,134	1,202,808	43,905	719,039
Halton	1,712	278,200	374	175,780	86	27,950	1,607	666,905	39,215	493,926
Peel	2,912	330,715	370	98,668	258	60,199	1,160	328,663	35,993	691,249
York	8,230	588,445	1,635	960,563	639	343,463	3,009	1,375,534	68,306	1,386,029
Ontario	3,817	490,752	722	315,514	471	197,820	11,767	4,394,268	68,628	851,719
Durham	3,024	376,307	398	190,244	460	186,760	5,355	2,506,140	55,059	590,882
Northumberland	4,071	438,569	489	210,270	216	68,580	3,277	1,433,688	70,475	650,390
Prince Edward	2,156	242,559	146	32,850	29	5,800	36	10,800	41,021	342,412
Totals	31,016	3,405,194	4,809	2,315,051	2,476	1,019,168	28,525	11,973,449	453,066	6,396,841
Lennox & Add	3,691	573,581	43	12,900	56	12,600	173	51,900	67,812	446,332
Frontenac	3,914	292,415	117	64,935	111	43,013	531	207,090	74,306	617,045
Leeds & Gren	7,360	1,166,118	177	88,500	111	30,525	156	76,701	168,109	1,094,851
Dundas	2,578	547,825	113	48,966	28	7,000	42	12,600	43,824	970,482
Stormont	2,050	256,250	44	19,800	13	2,600	93	23,250	39,609	521,159
Glengarry	2,762	379,775	54	27,000	31	6,200	32	9,600	46,675	307,993
Prescott	2,545	325,404	53	13,250	43	8,600	113	56,500	42,499	317,871
Russell	1,716	226,512	32	9,600	125	41,667	238	83,300	22,793	347,108
Carleton	6,292	935,935	517	212,833	462	167,092	1,464	519,720	82,294	1,022,993
Renfrew	3,919	718,157	115	34,020	98	22,214	676	199,981	69,711	855,082
Lanark	3,909	685,639	134	49,134	106	46,375	314	130,834	107,631	807,429
Totals	40,736	6,107,611	1,399	580,938	1,184	387,886	3,832	1,371,476	765,263	7,308,345
Victoria	3,046	385,837	282	151,575	275	105,251	3,673	1,122,506	49,735	591,392
Peterborough	2,598	333,687	308	132,440	340	100,038	1,109	363,198	55,785	543,649
Haliburton	648	77,112	1	300	12	3,300	407	88,185	5,494	139,970
Hastings	5,529	854,507	190	63,333	170	76,500	586	217,658	97,240	661,876
Totals	11,821	1,651,143	781	347,648	797	285,089	5,775	1,791,547	208,254	1,936,887
Muskoka	1,389	160,721	29	8,023	76	17,987	1,143	315,879	9,344	250,786
Parry Sound	628	120,369	6	1,800	19	5,700	752	222,464	3,869	110,041
Algoma	701	122,675	26	7,800	41	12,300	588	147,000	3,986	130,684
Totals	2,718	403,765	61	17,623	136	35,987	2,483	685,343	17,199	491,511
Province '85.	159,741	21,091,144	16,435	7,660,729	9,024	3,462,319	102,303	41,137,735	2,911,199	31,887,745
Province '84.	168,757	27,546,261	18,341	8,655,184	10,987	4,197,200	104,199	44,406,363	2,794,986	32,814,269

AVERAGE PRODUCTION.

TABLE No. IX.—Showing by County Municipalities and groups of Counties the average produce of crops per acre in Ontario in the year 1885.

COUNTIES.	Fall Wheat.	Spring Wheat.	Barley.	Oats.	Rye.	Pease.	Corn (in ear).	Buckwheat.	Beans.	Hay and Clover.	Potatoes.	Mangel-wurzels.	Carrots.	Turnips.
	Bush.	Bush.	Bush.	Bush.	Bush.	Bush.	Bush.	Bush.	Bush.	Tons.	Bush.	Bush.	Bush.	Bush.
Essex	24.4	14.7	27.8	39.7	21.2	18.1	71.8	32.5	32.5	1.78	102.7	400.0	368.7	366.7
Kent	25.6	15.6	28.9	41.3	30.0	21.7	66.8	23.7	18.5	1.70	101.9	567.8	420.0	500.0
Elgin	22.7	14.1	29.4	38.3	13.6	22.3	74.0	20.6	23.0	1.61	68.9	470.0	318.9	354.0
Norfolk	23.5	15.2	29.1	37.5	15.2	20.0	68.2	21.3	15.7	1.39	68.3	445.8	310.8	382.8
Haldimand	25.0	13.6	28.8	36.9	16.2	19.6	62.2	14.8	15.0	1.47	119.4	380.0	330.0	266.7
Welland	21.0	11.5	25.2	32.5	18.7	17.3	62.9	23.5	13.3	1.46	81.0	444.4	378.6	450.0
Group	24.0	14.0	28.3	38.2	16.9	20.4	69.6	22.5	19.0	1.57	88.8	464.2	357.7	401.6
Lambton	28.2	14.6	30.5	38.6	17.3	22.6	64.9	23.0	21.3	1.69	94.8	396.8	315.0	275.6
Huron	25.8	8.2	28.2	37.7	15.0	25.6	81.7	21.2	25.0	1.56	177.6	480.0	502.0	406.1
Bruce	22.4	11.2	28.0	37.0	25.0	24.6	67.5	17.0	22.0	1.21	184.3	615.4	466.7	544.6
Group	25.2	10.3	28.8	37.7	17.8	24.8	67.7	21.2	22.0	1.47	160.7	490.9	455.2	465.8
Grey	19.6	8.7	24.3	32.8	22.5	22.2	60.0	20.0	15.0	1.13	190.7	516.7	439.4	456.1
Simcoe	25.2	9.5	26.5	33.1	20.0	21.2	50.0	20.0	20.0	1.14	183.7	442.9	371.4	443.7
Group	23.6	9.1	25.4	33.0	20.5	21.8	52.8	20.0	17.1	1.13	187.3	460.7	403.2	452.8
Middlesex	23.5	12.4	27.6	37.7	20.0	21.4	70.1	21.0	19.5	1.68	72.0	418.7	286.0	326.1
Oxford	24.4	11.6	30.3	38.5	15.0	24.3	65.0	20.0	25.0	1.68	60.8	436.4	318.2	372.7
Brant	21.1	9.5	32.1	36.4	14.2	21.7	68.8	22.2	15.2	1.50	116.1	625.0	507.1	527.5
Perth	27.5	6.9	28.7	39.3	17.0	26.1	70.0	23.0	20.0	1.57	117.5	521.4	425.0	317.5
Wellington	23.7	8.1	28.1	37.2	15.0	24.1	70.0	22.0	15.0	1.64	130.3	404.6	352.1	401.7
Waterloo	25.1	8.7	31.8	39.2	17.3	25.6	53.8	20.0	20.0	1.47	149.6	440.0	402.8	345.0
Dufferin	21.8	9.2	28.6	37.9	10.0	21.9	70.0	20.0	20.0	1.37	143.2	400.0	350.0	308.3
Group	24.2	9.6	29.5	38.1	15.1	23.8	67.5	21.1	19.1	1.59	110.7	463.7	370.9	376.0
Lincoln	25.8	12.5	28.4	37.5	18.4	19.0	68.3	21.7	20.0	1.67	88.9	386.7	337.9	303.6
Wentworth	25.4	13.4	32.0	40.2	17.3	23.0	72.0	25.0	20.0	1.57	150.4	535.0	435.6	563.6
Halton	26.2	9.8	31.3	39.4	17.5	21.7	56.7	12.0	20.0	1.62	162.5	470.0	325.0	415.0
Peel	30.7	12.7	33.5	40.0	17.5	21.7	70.0	22.5	24.0	1.49	113.6	266.7	233.3	283.3
York	26.9	11.7	30.8	38.2	16.0	21.4	80.0	20.0	25.0	1.37	71.5	587.5	537.5	457.1
Ontario	25.1	10.8	27.4	35.0	15.4	21.6	40.0	20.0	25.0	1.48	128.6	437.0	420.0	373.4
Durham	23.4	10.5	28.1	34.5	12.6	20.6	42.7	20.0	19.5	1.36	124.4	478.0	406.0	468.0
Northumberland	24.3	9.7	27.2	30.9	14.4	17.8	37.0	20.8	20.3	1.35	107.7	430.0	317.5	437.5
Prince Edward	21.2	9.7	21.8	27.1	16.4	24.8	33.5	28.6	23.5	1.64	112.5	225.0	200.0	300.0
Group	26.7	10.8	28.3	36.3	15.2	21.2	53.0	24.5	21.7	1.48	109.8	481.4	411.6	419.8
Lennox & Add	17.0	12.1	23.8	32.1	13.9	19.4	55.0	27.2	15.7	1.51	155.4	300.0	225.0	300.0
Frontenac	21.1	15.0	26.2	32.0	17.7	18.5	55.0	28.3	31.7	1.38	74.7	555.0	387.5	390.0
Leeds & Grenville	20.3	19.6	27.0	34.9	16.4	20.2	46.4	26.2	17.3	1.73	158.4	500.0	275.0	491.7
Dundas	11.7	20.9	28.9	41.9	19.5	18.1	50.0	34.0	20.0	1.71	212.5	433.3	250.0	300.0
Stormont	15.7	20.7	28.0	33.2	10.0	18.7	60.0	30.0	40.0	1.60	125.0	450.0	200.0	250.0
Glengarry	19.7	18.8	25.0	38.8	20.0	17.8	50.0	29.0	25.0	1.37	137.5	500.0	200.0	300.0
Prescott	18.0	14.4	20.8	29.9	20.0	13.9	49.2	22.0	22.0	1.00	127.9	250.0	200.0	500.0
Russell	11.5	18.4	24.0	29.6	20.0	17.7	40.0	18.0	27.5	.94	132.0	300.0	333.3	350.0
Carleton	14.4	17.6	30.9	34.6	16.8	20.1	67.5	26.5	27.0	1.25	148.7	411.7	361.7	355.0
Renfrew	16.4	16.4	26.6	32.5	19.3	18.6	40.0	26.3	37.7	.67	183.2	295.8	226.7	295.8
Lanark	21.4	15.8	31.0	34.2	20.7	25.6	40.0	25.9	21.0	1.51	175.4	366.7	437.5	416.7
Group	19.2	16.9	25.8	34.3	17.5	19.1	50.8	26.7	26.1	1.38	149.9	415.3	327.6	357.9
Victoria	23.9	9.7	25.4	30.5	16.2	19.6	50.0	10.0	20.0	1.17	126.7	537.5	382.7	305.6
Peterborough	19.8	8.1	23.8	31.6	16.2	19.5	52.5	22.0	10.0	1.05	128.4	430.0	294.2	327.5
Haliburton	11.2	12.2	25.0	28.3	14.4	16.3	50.0	10.0	20.0	1.00	119.0	300.0	275.0	216.7
Hastings	18.1	13.9	25.8	32.3	14.5	19.1	36.7	25.7	30.0	1.38	154.6	333.3	450.0	371.4
Group	20.6	10.2	25.3	31.3	14.9	19.3	39.7	23.0	17.8	1.22	139.7	445.1	357.7	310.2
Muskoka	22.0	13.6	20.5	26.4	15.6	19.5	33.3	19.0	32.5	1.08	115.7	276.7	236.7	276.4
Parry Sound	20.0	18.3	23.7	34.7	17.8	19.9	60.0	22.5	20 0	1.07	191.7	300.0	300.0	295.8
Algoma	20.0	15.0	27.5	28.7	16.5	25.0	50.0	25.0	20.0	1.21	175.0	300.0	300.0	250.0
Group	20.5	15.4	23.9	29.5	16.2	22.0	39.4	21.1	27.9	1.11	148.6	288.9	264.6	276.0
Province 1885	24.5	11.4	27.7	35.8	16.2	21.7	64.0	24.8	20.1	1.43	132.0	466.1	383.7	402.1
Province 1884	24.0	20.2	27.3	38.9	15.9	24.0	74.1	22.5	23.8	1.39	163.2	471.9	382.0	426.2

HORSES AND CATTLE.

TABLE No. X.—Showing by County Municipalities and groups of Counties the number of Horses and Cattle in Ontario in the year 1885.

COUNTIES.	Horses.				Cattle.				
	Working Horses.	Breeding Mares.	Unbroken Horses.	Totals.	Working Oxen.	Milch Cows.	Store Cattle over two years.	Young and other Cattle.	Totals.
Essex	7,463	2,710	3,939	14,112	208	11,634	6,868	15,149	33,859
Kent	9,771	2,864	4,549	17,184	129	18,483	12,652	25,435	56,699
Elgin	7,651	2,098	3,926	13,675	281	16,250	12,188	20,025	48,744
Norfolk	6,689	1,748	3,054	11,491	517	14,598	6,167	15,384	36,666
Haldimand	5,475	1,850	3,069	10,394	187	12,143	4,802	15,494	32,626
Welland	4,980	1,250	2,322	8,552	203	8,291	3,849	9,205	21,548
Totals	42,029	12,520	20,859	75,408	1,525	81,399	46,526	100,692	230,142
Lambton	7,568	1,990	3,569	13,127	34	16,398	13,416	25,778	55,626
Huron	13,201	5,388	7,939	26,478	458	31,358	25,508	49,746	107,070
Bruce	9,915	3,295	5,374	18,584	1,016	25,476	16,643	38,469	81,604
Totals	30,684	10,623	16,882	58,189	1,508	73,232	55,567	113,993	244,300
Grey	13,198	4,001	6,203	23,402	2,266	32,448	21,775	49,126	105,615
Simcoe	12,730	4,047	5,875	22,652	942	23,907	16,544	32,065	73,458
Totals	25,928	8,048	12,078	46,054	3,208	56,355	38,319	81,191	179,073
Middlesex	14,175	4,633	7,843	26,651	87	34,106	30,561	48,429	113,183
Oxford	9,491	2,972	4,686	17,149	151	31,555	13,850	26,315	71,871
Brant	5,190	1,341	2,293	8,824	45	10,154	4,893	12,215	27,307
Perth	10,011	3,311	4,584	17,906	140	26,764	17,078	35,509	79,491
Wellington	11,198	3,777	5,298	20,273	482	25,462	16,616	35,995	78,555
Waterloo	7,018	2,172	2,876	12,066	71	13,580	5,252	18,089	36,992
Dufferin	4,730	1,522	2,150	8,402	319	9,871	7,376	13,842	31,408
Totals	61,813	19,728	29,730	111,271	1,295	151,492	95,626	190,394	438,807
Lincoln	5,010	1,210	2,084	8,304	172	8,913	2,738	9,371	21,194
Wentworth	6,899	1,828	2,971	11,698	176	14,321	4,679	13,572	32,748
Halton	4,790	1,310	2,025	8,125	245	9,767	6,301	13,175	29,488
Peel	6,520	1,988	2,870	11,378	53	11,718	6,345	13,212	31,328
York	12,618	4,826	6,815	24,259	130	21,622	8,930	20,347	51,029
Ontario	9,506	3,627	5,015	18,148	51	16,085	10,513	23,358	50,007
Durham	8,035	2,291	3,828	14,154	91	12,063	7,525	16,895	36,574
Northumberland	9,236	2,258	4,417	15,911	254	19,750	6,248	18,641	44,893
Prince Edward	5,992	1,443	2,666	10,101	62	9,464	1,916	7,599	19,041
Totals	68,606	20,781	32,691	122,078	1,234	123,703	55,195	136,170	316,302
Lennox & Add	5,966	1,482	2,422	9,870	530	13,998	5,422	12,340	32,290
Frontenac	5,013	1,294	2,484	8,791	439	14,250	4,104	11,889	30,682
Leeds & Grenville	10,002	2,455	4,883	17,340	133	45,107	6,145	24,604	75,989
Dundas	4,300	1,248	2,143	7,691	28	16,826	1,995	9,611	28,460
Stormont	3,560	1,160	1,889	6,609	11	14,719	2,803	9,126	26,659
Glengarry	4,449	1,690	2,154	8,293	38	18,037	3,483	10,967	32,525
Prescott	3,648	1,397	1,994	7,039	29	12,053	3,018	8,793	23,393
Russell	2,157	1,012	1,370	4,539	84	7,908	2,059	6,713	16,764
Carleton	7,010	2,462	3,330	12,802	37	19,398	7,783	17,958	45,176
Renfrew	5,899	1,638	2,583	10,120	165	16,438	9,124	18,938	44,665
Lanark	5,902	1,537	2,405	9,844	174	18,299	8,038	17,472	43,983
Totals	57,906	17,375	27,657	102,938	1,668	197,033	53,974	148,411	401,086
Victoria	6,746	2,084	3,419	12,249	370	13,382	9,322	17,636	40,710
Peterborough	6,119	1,604	2,584	10,307	540	14,298	6,560	15,242	36,640
Haliburton	627	97	152	876	380	2,148	1,022	2,949	6,499
Hastings	9,023	2,313	4,280	15,616	1,229	28,967	7,189	18,704	56,089
Totals	22,515	6,098	10,435	39,048	2,519	58,795	24,093	54,531	139,938
Muskoka	1,111	342	440	1,893	1,070	4,180	2,202	6,199	13,651
Parry Sound	457	180	226	863	529	1,767	1,132	2,703	6,131
Algoma	538	268	261	1,067	746	2,049	1,222	3,033	7,050
Totals	2,106	790	927	3,823	2,345	7,996	4,556	11,935	26,832
Province. 1885.	311,587	95,963	151,259	558,809	15,302	750,005	373,856	837,317	1,976,480
Province. 1884.	303,474	93,910	138,569	535,953	16,793	710,519	384,453	813,905	1,925,670

SHEEP, PIGS AND POULTRY.

TABLE No. XI.—Showing by County Municipalities and groups of Counties the number of Sheep, Pigs and Poultry in Ontario in the year 1885.

COUNTIES.	Sheep.					Pigs.			Poultry.		
	Coarse-woolled.		Fine-woolled.		Totals.	Over 1 year.	Under 1 year.	Totals.	Turkeys	Geese.	Other Fowls.
	Over 1 year.	Under 1 year.	Over 1 year.	Under 1 year.							
Essex	12,651	7,410	3,041	2,777	25,879	12,009	32,052	44,061	12,162	15,522	177,733
Kent	19,473	11,209	3,498	2,526	36,706	9,411	33,104	42,515	15,016	13,166	186,729
Elgin	17,548	11,801	3,199	2,306	34,854	5,475	20,975	26,450	11,108	8,617	137,831
Norfolk	13,272	8,549	4,258	2,796	28,875	4,938	17,443	22,381	8,763	6,939	127,448
Haldimand	15,491	10,100	4,002	3,216	32,809	3,881	12,977	16,858	10,045	6,995	101,187
Welland	11,110	6,179	6,187	4,119	27,595	2,079	8,658	10,737	8,282	4,584	90,750
Totals	89,545	55,248	24,185	17,740	186,718	37,793	125,209	163,002	65,376	55,823	821,678
Lambton	22,384	14,752	2,657	1,523	41,316	4,280	12,664	16,944	8,603	9,367	120,062
Huron	46,155	28,987	6,068	4,467	85,677	8,291	20,384	28,675	10,987	24,986	278,732
Bruce	44,658	27,163	6,931	4,438	83,190	6,904	17,186	24,090	6,289	16,072	180,357
Totals	113,197	70,902	15,656	10,428	210,183	19,475	50,234	69,709	25,879	50,425	579,151
Grey	70,456	39,701	7,376	4,898	122,431	9,148	26,127	35,275	15,936	25,019	231,528
Simcoe	45 892	25,476	7,839	5,675	84,882	12,927	29,561	42,488	17,796	25,770	208,378
Totals	116,348	65,177	15,215	10,573	207,313	22,075	55,688	77,763	33,732	50,789	439,906
Middlesex	32,211	21,462	4,916	2,879	61,468	7,570	27,577	35,147	24,564	21,511	276,225
Oxford	15,681	10,170	4,742	3,552	34,145	5,682	20,176	25,858	11,046	8,857	167,625
Brant	12,361	8,579	3,479	2,344	26,763	2,741	10,482	13,223	5,511	4,704	78,272
Perth	29,784	20,980	3,298	2,155	56,217	5,292	15,841	21,133	7,731	17,991	205,021
Wellington	43,900	27,896	8,610	7,006	87,412	6,275	23,672	29,947	12,899	20,311	193,153
Waterloo	19,571	11,831	5,894	3,426	40,722	3,574	11,933	15,507	3,703	6,094	116,450
Dufferin	20,097	13.283	1,578	1,324	36,282	4,059	10,893	14,952	9,504	12,545	80,320
Totals	173,605	114,201	32,517	22,686	343,009	35,193	120,574	155,767	74,958	92,013	1,117,066
Lincoln	7.609	4,946	3,219	2,467	18,241	3,369	9,810	13,179	7,422	3,902	84,438
Wentworth	12,195	7,820	3,208	2,425	25,648	2,654	13,254	15,908	8,063	6,818	95,027
Halton	10,513	6,857	2,168	1,561	21,099	2,086	9,517	11,603	6,195	8,358	70,163
Peel	14,477	8,371	2,179	1,649	26,676	4,294	15,572	19,866	17,374	16,162	110,856
York	24,233	12,435	8,392	6,811	51,871	6,183	28,667	34,850	17,518	19,593	187,894
Ontario	20,441	12,198	7,827	5,322	45,788	6,322	18,572	24,894	11,741	11,985	149,791
Durham	19,453	10,749	2,399	1,737	34,338	5,013	12,583	17,596	13,327	15,757	120,313
Northumberl'd	21,856	13,383	1,927	1,619	38,785	5,754	13,352	19,106	9,329	12,209	134,404
P. Edward	7,524	4,411	2,319	1,275	15,529	3,137	3,794	6,931	2,613	4,469	88,869
Totals	138,301	81,170	33,638	24,866	277,975	38,812	125,121	163,933	93,582	99,253	1,041,755
Lennox & Ad.	13,550	9,320	2,527	1,673	27,070	2,858	5,857	8,715	2,874	6,665	79,455
Frontenac	16,801	11,250	3,168	2,961	34,180	2,895	5,334	8,229	7,391	7,442	71,456
Leeds & Gren.	33,267	20,761	7,586	5,063	66,677	7,767	12,919	20,686	29,215	15,564	179,797
Dundas	10,616	6,113	1,997	1,378	20,104	3,596	6,004	9,600	5,181	5,769	108,281
Stormont	8,623	4,718	2,252	871	16,464	2,592	4,625	7,217	2,168	3,602	77,562
Glengarry	14,105	6,076	3,435	2,100	25,716	3,934	5,550	9,484	2,415	6,302	76,433
Prescott	11,441	7,171	2,321	907	21,840	4,319	5,811	10,130	5,581	3,330	58,070
Russell	7,241	3,916	1,764	1,173	14,094	2,685	4,678	7,363	5,740	3,485	45,136
Carleton	21,346	12,969	5,622	4,098	44,035	6,640	13,203	19,843	22,344	15,775	144,691
Renfrew	32,373	16,358	5,635	3,061	57,427	8,483	8,594	17,077	8,694	10,110	84,201
Lanark	34,499	20,186	3,225	2,168	60,078	5,022	8,788	13,810	19,669	9,928	123,575
Totals	203,862	118,838	39,532	25,453	387,685	50,791	81,363	132,154	111,272	87,972	1,048,657
Victoria	19,106	11,518	4,337	3,663	38,624	6,198	11,037	17,235	4,648	11,304	98,484
Peterborough	17,981	10,169	2,106	1,625	31,881	5,040	9,409	14,449	9,343	11,942	98,706
Haliburton	3,034	1,666	1,651	911	7,262	547	957	1,504	537	1,144	11,518
Hastings	23,756	13,662	5,124	3,309	45,851	6,701	11,529	18,230	4,989	11,073	126,584
Totals	63,877	37,015	13,218	9,508	123,618	18,486	32,932	51,418	19,517	35,463	335,292
Muskoka	5,085	2,739	1,569	921	10,314	1,094	1,958	3,052	1,618	1,501	21,225
Parry Sound	1,998	1,120	532	302	3,952	576	1,232	1,808	486	638	10,542
Algoma	2,944	1,542	186	166	4,838	1,217	2,439	3,656	1,813	3,065	16,358
Totals	10,027	5,401	2,287	1,389	19,104	2,887	5,629	8,516	3,917	5,204	48,125
Province.:											
1885	908,762	547,952	176,248	122,643	1,755,605	225,512	596,750	822,262	428,233	476,942	5,431,630
1884	994,608	595,996	176,341	123,788	1,890,733	257,711	658,447	916,158	445,532	540,130	5,251,944

WOOL.

TABLE No. XII.—Showing by County Municipalities and groups of Counties the Clip of Coarse and Fine Wools in Ontario in 1885, and the average for the four years 1882-5.

COUNTIES.	1885.					Average 1882-5.				
	Coarse Wool.		Fine Wool.		Total Clip.	Coarse Wool.		Fine Wool.		Total Clip.
	Fleeces.	Pounds.	Fleeces.	Pounds.		Fleeces.	Pounds.	Fleeces.	Pounds.	
Essex	12,432	69,290	3,087	16,268	85,558	12,621	69,151	1,997	10,221	79,372
Kent	19,869	118,168	3,480	16,780	134,948	20,538	116,540	3,785	19,181	135,721
Elgin	17,326	99,396	3,107	16,152	115,548	23,604	132,710	3,509	18,639	151,349
Norfolk	13,371	71,973	4,407	22,058	94,031	16,170	86,188	4,174	19,953	106,141
Haldimand	15,509	97,099	4,006	20,659	117,758	17,981	108,083	3,706	18,104	126,187
Welland	11,106	60,930	6,074	26,676	87,606	11,494	60,712	4,169	18,769	79,481
Totals	89,613	516,856	24,161	118,593	635,449	102,408	573,384	21,340	104,867	678,251
Lambton	22,595	133,264	2,782	14,492	147,756	27,435	157,796	3,606	19,032	176,828
Huron	47,064	268,456	6,273	33,207	301,663	51,034	289,497	5,651	30,229	319,726
Bruce	45,027	256,297	7,050	38,349	294,646	45,055	253,745	6,644	56,107	289,852
Totals	114,686	658,017	16,105	86,048	744,065	123,524	701,038	15,901	85,368	786,406
Grey	71,271	397,703	7,604	38,678	436,381	67,211	366,669	8,712	45,456	412,125
Simcoe	46,458	272,064	7,955	41,622	313,686	42,216	230,782	6,831	35,682	266,464
Totals	117,729	669,767	15,559	80,300	750,067	109,427	597,451	15,543	81,138	678,589
Middlesex	32,740	195,271	5,010	28,359	223,630	42,584	248,563	5,055	28,091	276,654
Oxford	16,061	93,305	4,829	25,445	118,750	22,515	129,851	3,636	19,153	149,004
Brant	12,389	74,654	3,865	20,465	95,119	14,993	86,798	3,054	16,656	103,454
Perth	30,557	173,872	3,482	18,851	192,723	34,015	189,888	4,270	23,046	212,934
Wellington	44,830	265,439	8,655	43,407	308,846	47,553	271,170	7,225	37,345	308,515
Waterloo	19,827	108,707	5,929	29,771	138,478	21,690	120,058	4,372	21,038	141,096
Dufferin	20,491	112,058	1,578	8,523	120,581	18,031	100,843	2,196	11,948	112,791
Totals	176,895	1,023,306	33,348	174,821	1,198,127	201,381	1,147,171	29,808	157,277	1,304,448
Lincoln	7,638	41,615	3,284	16,783	58,398	9,173	47,782	2,854	13,884	61,666
Wentworth	12,234	72,929	3,216	16,163	89,092	14,998	84,620	2,849	14,212	98,832
Halton	10,902	70,756	2,173	11,628	82,384	12,194	76,944	1,707	9,342	86,286
Peel	14,595	97,717	2,043	11,114	108,831	16,153	106,954	1,542	8,324	115,278
York	24,856	154,200	8,131	45,634	199,834	26,905	163,320	5,624	30,753	194,073
Ontario	20,824	136,443	8,132	45,048	181,491	25,061	156,980	6,070	33,900	190,880
Durham	19,646	117,647	2,396	14,848	132,495	21,689	125,823	2,365	13,736	139,559
Northumberland	22,228	128,258	2,064	10,630	138,888	21,217	120,111	2,545	13,588	133,699
Prince Edward	7,801	41,471	2,354	11,642	53,113	8,827	47,711	2,829	14,091	61,802
Totals	140,724	861,036	33,793	183,490	1,044,526	156,217	930,245	28,385	151,830	1,082,075
Lennox & Add	13,832	74,699	2,573	13,091	87,790	14,453	74,272	3,363	17,088	91,360
Frontenac	17,444	91,258	3,261	17,098	108,356	19,077	92,256	3,681	18,261	110,517
Leeds & Grenville	34,033	171,029	7,822	40,022	211,051	36,319	174,808	9,372	46,273	221,081
Dundas	10,825	53,574	2,107	10,165	63,739	11,090	54,434	2,807	13,416	67,850
Stormont	8,731	43,749	2,281	11,613	55,362	8,818	43,648	2,679	13,649	57,297
Glengarry	14,310	66,059	3,783	18,388	84,447	14,851	67,073	4,114	19,534	86,607
Prescott	11,565	56,522	2,437	12,651	69,173	9,649	44,805	2,852	13,996	58,801
Russell	7,292	35,139	1,758	9,196	44,335	7,381	34,296	1,787	8,866	43,162
Carleton	22,406	114,567	5,716	28,721	143,288	27,926	137,250	5,346	26,497	163,747
Renfrew	33,146	144,012	5,762	24,894	168,906	32,859	142,826	6,100	26,863	169,689
Lanark	35,398	172,959	3,283	15,360	188,319	34,712	154,038	3,390	15,677	179,715
Totals	208,982	1,023,567	40,783	201,199	1,224,766	217,135	1,029,706	45,490	220,120	1,249,826
Victoria	20,334	110,726	4,516	24,764	135,490	20,936	113,632	3,534	19,985	133,617
Peterborough	18,681	100,909	2,250	10,917	111,826	17,928	94,705	2,291	11,262	105,967
Haliburton	3,115	15,747	1,687	7,565	23,312	2,565	12,377	1,367	5,639	18,016
Hastings	24,037	122,897	5,481	25,089	147,986	23,377	114,140	6,827	31,409	145,549
Totals	66,167	350,279	13,934	68,335	418,614	64,806	334,854	14,019	68,295	403,149
Muskoka	5,361	28,941	1,606	8,238	37,179	4,474	24,207	1,249	6,415	30,622
Parry Sound	2,170	12,185	557	2,698	14,883	1,353	8,966	548	3,003	11,069
Algoma	2,987	18,021	210	1,169	19,190	1,959	11,718	440	2,194	13,912
Totals	10,518	59,147	2,373	12,105	71,252	7,786	43,991	2,237	11,612	55,603
The Province	925,314	5,161,975	180,056	924,891	6,086,866	982,684	5,357,840	172,724	880,507	6,238,347

FACTORY CHEESE.

TABLE No. XIII.—Showing by County Municipalities and group of Counties the quantity and value of Cheese made at 536 factories in Ontario in 1885, the average date of opening and closing, and the total number of factories reported in operation.

COUNTIES.	Factories. No. in operation. 1884.	1885.	No. making Returns.	Quantity of— Milk used.	Cheese made.	Value of Cheese made.	Milk required to make 1 lb. of cheese.	Value of cheese per 100 lbs.	Average Date of— Opening	Closing
				lbs.	lbs.	$ c.	lbs.	$ c.		
Essex	1	1	1	270,871	26,622	2,618 86	10.17	9 84	June 1	Oct. 2
Kent	15	12	9	7,630,339	722,670	60,504 19	10.56	8 37	May 12	" 31
Elgin	24	23	16	15,349,332	1,472,226	121,777 16	10.43	8 27	April 30	Nov. 5
Norfolk	20	21	16	17,216,025	1,661,342	133,574 23	10.36	8 04	" 28	" 7
Haldimand	9	8	6	6,682,900	653,023	53,710 69	10.23	8 22	May 5	" 1
Welland	5	8	6	2,022,541	193,234	16,764 50	10.32	8 68	" 14	Oct. 13
Totals	74	73	54	49,172,008	4,729,117	388,949 63	10.40	8 22	" 4	Nov. 1
Lambton	21	21	16	13,487,229	1,274,773	105,118 55	10.58	8 25	May 12	Oct. 29
Huron	18	16	12	16,202,876	1,540,702	130,808 98	10.52	8 49	" 11	" 31
Bruce	18	19	13	13,255,800	1,276,146	106,283 08	10.39	8 33	" 20	" 22
Totals	57	56	41	42,945,905	4,091,621	342,210 61	10.50	8 36	" 14	" 27
Grey	7	10	7	5,358,162	525,820	42,847 28	10.19	8 15	May 15	Oct. 17
Simcoe	7	6	6	3,041,971	292,641	24,145 94	10.39	8 25	" 18	" 9
Totals	14	16	13	8,400,133	818,461	66,993 22	10.26	8 19	" 16	" 13
Middlesex	41	40	32	41,803,262	3,949,605	331,095 83	10.58	8 38	April 30	Nov. 10
Oxford	53	48	29	48,714,082	4,654,258	389,888 98	10.47	8 38	" 21	" 13
Brant	9	7	7	5,972,461	581,431	46,973 67	10.27	8 08	" 25	" 2
Perth	25	27	23	30,814,605	2,959,681	254,411 68	10.41	8 56	May 4	" 5
Wellington	13	12	11	14,221,071	1,364,140	111,985 05	10.42	8 21	" 10	" 1
Waterloo	11	8	5	4,787,582	454,940	38,332 61	10.52	8 43	" 18	Oct. 27
Dufferin	3	5	3	2,589,158	246,478	19,928 97	10.50	8 09	" 23	" 4
Totals	155	147	110	148,902,221	14,210,533	1,192,616 79	10.48	8 39	" 1	Nov. 7
Lincoln	5	4	4	3,556,180	340,462	26,519 61	10.44	7 79	May 5	Nov. 4
Wentworth	6	6	3	3,775,179	358,665	29,089 70	10.53	8 11	" 1	" 1
Halton	3	2	1	338,244	31,970	2,877 30	10.58	9 00	" 4	Oct. 3
Peel	3	4	2	1,424,705	132,413	10,289 07	10.76	7 77	" 23	" 1
York	3	3	2	675,024	64,237	5,544 21	10.51	8 63	" 28	Sep. 22
Ontario	8	7	4	1,336,691	124,337	10,223 69	10.75	8 22	" 18	" 17
Durham	4	4	4	3,788,995	365,071	28,296 70	10.38	7 75	" 10	Oct. 29
Northumberland	32	32	25	20,001,080	1,946,543	152,647 06	10.28	7 84	" 3	" 28
Prince Edward	16	14	10	10,392,995	1,019,101	77,155 88	10.20	7 57	" 4	" 23
Totals	80	76	55	45,289,093	4,382,799	342,643 22	10.33	7 82	" 6	" 22
Lennox and Addington	18	19	12	15,421,333	1,513,503	117,940 64	10.19	7 79	May 2	Oct. 29
Frontenac	32	33	23	15,562,905	1,508,978	118,880 27	10.31	7 88	" 2	" 22
Leeds and Grenville	91	92	54	58,686,032	5,852,103	463.692 03	10.03	7 92	April 24	Nov. 1
Dundas	20	21	20	19,695,589	1,953,788	162,169 39	10.08	8 30	" 30	Oct. 29
Stormont	24	25	17	14,686,290	1,446,544	112,146 87	10.15	7 75	May 4	" 24
Glengarry	47	47	25	14,308,859	1,325,423	106,604 36	10.80	8 04	" 5	" 23
Prescott	22	22	16	7,925,625	787,519	64,176 97	10.06	8 15	" 8	" 14
Russell	7	5	5	1,972,196	197,108	15,554 10	10.01	7 89	" 5	" 17
Carleton	7	11	10	6,241,866	621,797	50,121 46	10.04	8 06	" 15	" 22
Renfrew	5	4	3	1,336,774	130,774	10,666 60	10.22	8 16	" 13	" 9
Lanark	18	21	17	17,508,815	1,753,749	138,984 68	9.98	7 93	" 7	" 22
Totals	291	300	202	173,346,284	17,091,286	1,360.937 37	10.14	7 96	May 2	" 25
Victoria	10	12	6	3,424,480	338.894	26,754 69	10.10	7 89	May 10	Oct. 21
Peterborough	19	20	15	9.873,560	952,110	75,128 48	10.37	7 89	" 7	" 24
Hastings	51	52	40	41,415,423	4,141,050	324,600 45	10.00	7 84	April 27	Nov. 3
Totals	80	84	61	54,713,463	5,432,054	426,483 62	10.07	7 85	May 1	Oct. 30
The Province 1885		752	536	522,769,107	50,755,871	4,120,834 46	10.30	8 12	May 4	Oct. 29
The Province 1884	751		567	517,899,803	50,538,932	5,284,124 48	10.25	10 46	" 3	" 30
The Province 1883	635		440	373,962,719	37,079,896	3,872,927 52	10.09	10 44	" 3	" 30

FACTORY CHEESE.

TABLE No. XIV.—Showing by County Municipalities and groups of Counties the averages of days in operation, of number of patrons, of number of cows, and of value of product per cow, for 433 factories in Ontario, making complete returns in 1885.

COUNTIES.	No. of factories returned.	Average No. of days worked.	Quantity of— Milk used.	Quantity of— Cheese made.	Value of cheese made.	No. of Patrons.	Average No. of Cows.	Value of Product per Cow— Per Season.	Value of Product per Cow— Per Day.
			lbs.	lbs.	$ c.			$ c.	cts.
Essex	1	104	270,871	26,622	2,618 86	32	145	18 06	17.4
Kent	8	149	6,491,421	617,728	52,113 25	609	2,310	22 56	15.1
Elgin	11	166	11,874,815	1,134,770	93,968 72	743	3,714	25 30	15.2
Norfolk	14	167	15,942,620	1,540,896	124,393 95	1,184	5,407	23 00	13.8
Haldimand	6	157	6,682,900	653,023	53,710 69	503	2,430	22 10	14.1
Welland	6	133	2,022,541	193,234	16,754 50	227	980	17 11	12.9
Totals	46	160	43,285,168	4,166,273	343,559 27	3,298	14,986	22 92	14.4
Lambton	12	151	10,583,517	1,003,429	83,360 60	859	3,630	22 96	15.2
Huron	10	146	13,699,203	1,302,318	110,255 95	1,075	4,694	23 49	16.1
Bruce	11	131	11,543,989	1,109,904	92,292 92	1,039	4,377	21 09	16.1
Totals	33	142	35,826,709	3,415,651	285,909 47	2,973	12,701	22 51	15 8
Grey	5	139	3,972,668	391,851	32,465 31	404	1,466	22 10	15.9
Simcoe	4	120	1,507,172	147,172	12,334 96	199	740	16 67	13.9
Totals	9	133	5,479,840	539,023	44,740 27	603	2,206	20 28	15.3
Middlesex	25	169	33,291,611	3,148,972	263,771 74	1,641	10,598	24 89	14.8
Oxford	26	179	43,158,641	4,129,068	345,273 24	1,783	13,599	25 39	14.2
Brant	6	164	5,307,315	521,164	42,165 86	368	1,835	22 98	14.0
Perth	20	156	24,726,326	2,374,447	203,879 46	1,463	8,570	23 79	15.3
Wellington	9	144	11,376,906	1,091,497	89,396 76	746	3,960	22 57	15.7
Waterloo	4	138	3,272,895	309,543	26,111 41	231	1,080	24 18	17.5
Dufferin	2	122	2,132,162	202,408	16,364 51	182	850	19 25	15.8
Totals	92	165	123,265,856	11,777,099	986,962 98	6,414	40,492	24 37	14.8
Lincoln	3	156	2,788,548	265,577	20,774 54	214	920	22 58	14.5
Wentworth	3	157	3,775,179	358,665	29,089 70	256	1,350	21 54	13.7
Halton	1	132	338,244	31,970	2,877 30	23	130	22 13	16.8
Peel	2	117	1,424,705	132,413	10,289 07	103	512	20 10	17.2
York	2	100	675,024	64,237	5,544 21	71	330	16 80	16.8
Ontario	3	107	935,668	86,341	7,062 03	140	415	17 02	15.9
Durham	4	149	3,788,995	365,071	28,296 70	345	1,383	20 46	13.7
Northumberland	21	157	16,669,025	1,624,013	127,086 72	1,119	5,621	22 61	14.4
Prince Edward	10	149	10,392,995	1,019,101	77,155 88	901	3,786	20 38	13.7
Totals	49	150	40,788,383	3,947,388	308,176 15	3,172	14,447	21 33	14.2
Lennox and Addington	10	155	13,383,217	1,314,391	102,902 47	941	4,790	21 48	13.9
Frontenac	21	152	14,218,755	1,376,574	108,859 79	802	5,064	21 50	14.1
Leeds and Grenville	48	168	53,090,181	5,293,667	418,721 47	2,260	19,139	21 88	13.0
Dundas	13	159	13,796,015	1,371,114	114,402 66	599	5,223	21 90	13.8
Stormont	12	149	11,986,801	1,190,556	92,071 47	602	4,490	20 51	13.8
Glengarry	2	148	1,107,785	105,316	8,408 35	78	440	19 11	12.9
Prescott	14	138	6,722,859	675,021	55,047 34	453	3,275	16 81	12.2
Russell	2	150	973,780	97,378	7,907 33	73	387	20 43	13.6
Carleton	8	137	5,296,246	527,235	42,335 62	349	2,430	17 42	12.7
Renfrew	3	125	1,336,774	130,774	10,666 60	132	760	14 04	11.2
Lanark	18	154	17,508,815	1,753,749	138,984 68	973	6,818	20 38	13.3
Totals	151	157	139,421,228	13,835,775	1,100,307 78	7,262	52,816	20 83	13.3
Victoria	5	138	2,711,742	268,478	21,206 90	212	1,080	19 64	14.2
Peterborough	13	145	8,241,128	797,557	63,018 52	565	3,126	20 16	13.9
Hastings	35	164	37,315,305	3,731,803	292,634 11	1,801	12,970	22 56	13.8
Totals	53	159	48,268,175	4,797,838	376,859 53	2,578	17,176	21 94	13.8
The Province 1885	433	157	436,335,359	42,479,047	3,446,515 45	26,300	154,824	22 26	14.2
The Province 1884	445	159	426,260,665	41,595,027	4,357,208 01	24,015	158,366	27 51	17.3
The Province 1883	385	156	327,353,679	32,495,811	3,396,882 21	19,797	117,577	28 89	18.5

AVERAGE AREA AND PRODUCE OF CROPS.

TABLE No. XV.—Showing by County Municipalities and groups of Counties the average yearly area and produce of Wheat, Barley, Oats and Rye in Ontario in the four years 1882-5.

COUNTIES.	Fall Wheat.		Spring Wheat.		Barley.		Oats.		Rye.	
	Acres.	Bush.	Acres.	Bush.	Acres.	Bush.	Acres.	Bush.	Acres.	Bush.
Essex	33,110	656,359	1,924	30,765	2,074	55,890	26,027	999,254	840	17,458
Kent	61,377	1,270,058	2,568	42,159	5,813	154,845	30,780	1,277,895	485	11,751
Elgin	45,950	933,539	2,096	34,015	4,513	123,966	31,054	1,224,070	1,230	20,994
Norfolk	33,109	666,164	990	15,869	6,029	171,072	25,991	963,341	7,307	113,016
Haldimand	32,830	603,766	3,116	48,014	15,334	346,601	20,770	740,718	1,306	22,516
Welland	23,247	383,828	2,215	32,839	4,373	108,165	18,295	606,975	754	13,086
Totals	229,623	4,513,714	12,909	203,661	38,136	960,539	152,917	5,812,253	11,922	198,821
Lambton	34,227	683,364	7,847	125,704	15,069	377,550	35,988	1,381,070	263	4,183
Huron	73,130	1,575,370	25,890	363,604	26,114	747,469	68,297	2,648,066	301	4,783
Bruce	54,841	1,140,220	15,785	223,120	17,900	497,351	51,858	1,859,467	409	6,573
Totals	162,198	3,398,954	49,522	712,428	59,083	1,622,370	156,143	5,888,603	973	15,539
Grey	31,726	677,952	53,742	779,832	24,094	631,705	74,373	2,570,254	690	11,730
Simcoe	58,649	1,370,075	37,269	570,842	26,506	727,602	54,434	1,948,069	2,713	53,311
Totals	90,375	2,048,027	91,011	1,350,674	50,600	1,359,307	128,807	4,518,323	3,403	65,041
Middlesex	79,561	1,674,149	15,177	250,200	15,684	411,413	65,648	2,659,199	484	8,487
Oxford	40,674	836,535	12,973	230,570	17,034	527,531	47,799	1,978,985	1,295	18,393
Brant	32,839	682,958	1,795	25,279	14,693	432,861	17,573	717,997	916	13,464
Perth	47,171	1,058,302	18,927	293,057	19,234	567,492	49,500	2,080,559	252	3,980
Wellington	31,148	661,329	27,232	405,717	32,995	945,718	59,618	2,293,318	969	17,427
Waterloo	41,416	952,693	7,860	120,824	15,030	474,962	31,758	1,298,072	660	11,730
Dufferin	13,276	276,417	22,198	310,932	10,023	257,085	24,529	861,161	1,028	17,712
Totals	286,085	6,142,383	106,162	1,636,579	124,693	3,617,062	296,425	11,889,291	5,604	91,193
Lincoln	22,668	462,680	2,863	45,805	4,527	123,003	17,451	650,323	663	10,364
Wentworth	32,943	726,264	3,166	52,175	11,219	341,676	27,345	1,136,235	1,160	20,940
Halton	24,328	516,483	4,039	63,746	11,769	347,392	17,305	679,703	638	10,927
Peel	29,102	718,203	14,888	261,286	30,255	903,629	25,817	1,048,214	2,111	43,040
York	44,118	1,039,763	29,199	522,778	50,621	1,497,035	56,379	2,383,929	2,517	39,333
Ontario	13,746	314,679	50,773	878,578	34,243	972,472	43,514	1,672,925	3,929	71,509
Durham	3,464	73,909	46,537	801,675	40,570	1,159,958	31,386	1,209,205	6,167	95,770
Northumberland	9,973	223,860	33,909	506,342	42,625	1,077,693	26,685	908,386	13,408	190,155
Prince Edward	2,888	44,317	8,314	114,100	42,046	886,149	12,983	376,000	10,258	144,610
Totals	183,230	4,120,158	193,688	3,246,485	267,875	7,309,007	258,865	10,064,920	40,851	626,648
Lennox & Add	2,373	42,995	7,589	118,907	43,509	1,009,434	20,168	652,269	6,798	102,855
Frontenac	2,662	51,646	9,289	153,340	20,554	522,118	24,915	821,614	5,509	94,551
Leeds & Gren	7,014	130,502	13,939	247,291	11,688	301,949	59,283	2,061,787	10,558	191,348
Dundas	1,995	35,294	4,447	87,282	8,229	257,015	26,985	1,043,223	1,974	48,981
Stormont	1,087	19,624	4,092	78,466	2,715	78,269	24,055	865,014	724	15,123
Glengarry	1,023	16,647	7,609	126,313	2,043	48,441	29,141	1,053,673	93	1,653
Prescott	127	1,525	7,842	118,469	1,941	45,122	24,321	737,525	386	7,086
Russell	335	5,915	4,438	75,963	1,224	31,356	16,881	579,072	396	7,675
Carleton	2,588	36,717	23,533	404,334	6,658	195,467	53,049	2,100.227	8,892	159,983
Renfrew	1,688	29,484	25,444	453,841	1,043	28,810	35,549	1,280,008	8,122	167,276
Lanark	4,118	80,757	14,437	244,032	2,279	67,349	31,689	1,174,496	7,342	146,314
Totals	25,010	451,106	122,659	2,108,238	101,883	2,585,330	346,036	12,368,908	50,794	942,845
Victoria	9,957	197,842	38,420	589,832	26,389	682,355	33,710	1,157,034	1,468	24,127
Peterborough	10,527	224,610	27,489	383,486	13,015	347,125	26,590	930,078	3,870	63,827
Haliburton	84	1,251	1,376	15,670	290	7,383	4,382	120,741	327	5,890
Hastings	8,839	168,778	19,128	323,481	42,308	1,054,204	39,007	1,257,078	18,430	294,148
Totals	29,407	592,481	86,413	1,312,469	82,002	2,091,067	103,689	3,464,931	24,095	387,992
Muskoka	54	982	1,716	26,807	523	11,576	7,358	230,682	487	10,063
Parry Sound	54	1,001	2,022	34,805	676	16,560	4,381	144,383	538	11,390
Algoma	365	8,212	7,482	150,755	559	15,025	3,221	118,045	107	1,919
Totals	473	10,195	11,220	212,367	1,758	43,161	14,960	493,110	1,132	23,372
The Province	1,006,401	21,277,018	673,584	10,782,901	726,030	19,587,843	1,457,842	54,500,339	138,774	2,351,451

AVERAGE AREA AND PRODUCE OF CROPS.

TABLE No. XVI.—Showing by County Municipalities and groups of Counties the average yearly area and produce of Pease and Hay and Clover in Ontario for the four years 1882-5; and of Corn, Buckwheat and Beans for the three years, 1882, 1884 and 1885.

COUNTIES.	Pease.		Corn.		Buckwheat.		Beans.		Hay and Clover.	
	Acres.	Bush.	Acres.	Bush. (in ear.)	Acres	Bush.	Acres	Bush.	Acres.	Tons.
Essex	3,282	64,708	30,147	2,333,014	594	15,835	489	13,480	34,116	54,564
Kent	6,177	129,230	25,667	2,012,380	831	21,412	10,416	211,546	49,787	78,465
Elgin	8,646	168,162	14,824	1,136,769	1,166	26,781	1,170	26,875	48,437	73,629
Norfolk	11,233	240,736	13,906	968,482	4,851	99,815	935	17,850	41.243	59,734
Haldimand	11,040	204,905	1,953	119,559	580	11,465	184	4,049	49,223	69,390
Welland	3,476	59,398	6,803	392,930	1,699	33,918	922	14,573	44,401	65,454
Totals	43,854	867,139	93,300	6,963,134	9,721	209,226	14,116	288,373	267,207	401,236
Lambton	6,254	123,846	7,383	446,987	476	11,670	373	8,229	51,135	78,577
Huron	27,262	611,799	1,744	115,069	215	4,078	105	2,760	88,628	127,446
Bruce	33,891	795,520	356	19,310	213	3,465	85	1,624	75,345	95,334
Totals	67,407	1,531,165	9,483	581,366	904	19,213	563	12,613	215,108	301,357
Grey	42,670	946,941	274	14,797	293	5,718	120	1,829	108,319	134,059
Simcoe	29.254	663,140	633	35,750	263	4,498	105	1,859	71,828	101,155
Totals	71,924	1,610,081	907	50,547	556	10,216	225	3,688	180,147	235,214
Middlesex	16,124	303,362	10,471	763 597	439	8,833	419	8,056	87,969	142,446
Oxford	11,828	266,488	8,574	555,580	678	15,252	279	8,447	62,654	99,031
Brant	7,897	165,884	4,644	339,381	745	16,629	821	14,963	32,816	52,000
Perth	19,961	449,290	626	44,614	113	2,863	65	1,680	64,937	103,514
Wellington	34,586	789,218	543	33,637	136	3,146	23	449	78,640	127,668
Waterloo	12,309	294,221	1,668	113,581	103	2,247	29	615	42,444	70,129
Dufferin	10,903	216,800	48	3,018	74	1,365	8	167	31,742	46,665
Totals	113,608	2,485,263	26,574	1,853,408	2,288	50,335	1,644	34,377	401.202	641.453
Lincoln	3,952	77,293	6,048	396,310	727	20,331	171	3,619	39,331	54,519
Wentworth	8,792	187,215	4,811	376,722	739	17,783	154	2,998	44,980	73,727
Halton	9,620	226,409	1,025	65,181	160	2,870	31	591	34,207	54,445
Peel	11,842	259,836	335	20,857	271	5,249	72	2,070	37,250	59,577
York	24,674	552,014	1,329	90,548	292	7,116	175	5,001	71,337	107,328
Ontario	23,353	499,800	2,322	132,333	315	6,516	432	9,807	51,067	77,974
Durham	21,164	435,305	1,915	106,301	726	15,233	343	7,645	43.963	64,231
Northumberland	19,262	353,291	3,603	201,103	3,546	77,588	630	12,978	51,425	68,890
Prince Edward	6,353	132,283	6,577	280,375	5,555	129,483	380	10,146	28,802	40,642
Totals	129,012	2,723,446	27,965	1,669,730	12,331	282,169	2,388	54,855	402.362	601,333
Lennox & Addingt'n	8,384	167,927	2,400	117,698	2,164	62,848	158	3,227	40,825	55.210
Frontenac	11.555	227,358	1,766	93,027	1,404	37,185	350	10,234	58,787	80,669
Leeds & Grenville	6,493	131,028	4,931	271,192	5,643	141,672	402	8,142	102,676	150,795
Dundas	1,876	42,019	1,421	88,785	1,394	40,735	161	4,236	32,647	51,679
Stormont	2,916	62,140	1,405	71,828	2,270	58,892	171	5,319	29,677	46,356
Glengarry	6,907	123,925	883	34,413	1,076	30,766	95	2,869	32,826	51,098
Prescott	11,757	171,655	1,445	64,483	1,823	40,369	617	20,190	27,594	38,249
Russell	4,741	97,459	470	21,422	982	22,553	300	7,535	17,559	22,717
Carleton	13,458	294,177	1,205	63,437	3,809	90,438	508	12,744	54,559	70,983
Renfrew	20,315	429,584	508	27,270	1,062	25,692	503	12,329	58,002	62,689
Lanark	10,999	270,851	1,377	64,143	6,766	181,468	246	6,004	56,038	80,212
Totals	99,401	2,018,123	17,811	917,698	28,393	732,618	3,511	92,829	511,190	710,657
Victoria	15,223	316,381	451	26,077	436	7,649	96	1,801	36,407	46 047
Peterborough	14,434	299,653	385	20,752	635	14,815	206	2,969	37,435	45,342
Haliburton	1,497	28,981	147	7,264	310	4,021	29	580	9,277	9,975
Hastings	16,872	303,909	5,692	263,266	3,110	81,998	261	5,943	63,083	88,610
Totals	48,026	948,924	6,675	317,359	4,491	108,483	592	11,293	146,202	189,974
Muskoka	2,562	52,453	152	5,446	233	5,854	29	755	18,185	21.661
Parry Sound	1,331	27,657	106	3,730	236	6,158	26	544	9,127	10,566
Algoma	3,013	80,158	76	3,563	63	1,801	11	179	8,850	12,356
Totals	6,906	160,268	334	12,739	532	13,813	66	1,478	36,162	44,583
The Province	580,138	12.344,409	183,049	12,365,981	59,216	1,426,073	23,105	499,506	2,159,580	3,125,807

AVERAGE AREA AND PRODUCE OF CROPS.

TABLE No. XVII.—Showing by County Municipalities and groups of Counties the average yearly area and produce of Potatoes, Mangel-wurzels, Carrots and Turnips in Ontario for the four years 1882-5.

COUNTIES.	Potatoes.		Mangel-wurzels.		Carrots.		Turnips.	
	Acres.	Bush.	Acres.	Bush.	Acres.	Bush.	Acres.	Bush.
Essex	2,920	359,196	184	77,139	67	21,241	233	75,325
Kent	3,733	553,733	253	104,942	125	37,580	399	146,384
Elgin	3,077	311,506	258	96,075	135	36,023	363	120,367
Norfolk	3,973	490,225	152	59,210	109	34,396	606	245,953
Haldimand	1,724	206,283	108	35,987	66	16,681	71	19,229
Welland	2,703	287,224	131	47,261	72	19,191	144	52,774
Totals	18,130	2,208,167	1,086	420,614	574	165,112	1,816	660,032
Lambton	3,271	363,888	355	127,225	166	47,032	299	97,656
Huron	5,405	742,384	1,327	612,237	556	239,245	6,891	2,553,897
Bruce	5,023	624,744	446	205,669	312	115,781	5,395	2,201,200
Totals	13,699	1,731,016	2,128	945,131	1,034	402,058	12,585	4,852,753
Grey	7,409	973,002	367	181,621	595	244,636	8,548	3,646,902
Simcoe	6,968	960,096	708	292,891	630	245,457	2,968	1,220,118
Totals	14,377	1,933,098	1,075	474,512	1,225	490,093	11,516	4,867,020
Middlesex	6,154	678,096	1,129	471,516	474	149,479	1,603	576,622
Oxford	3,708	409,121	961	469,801	348	150,644	4,960	1,984,303
Brant	2,372	290,380	327	180,922	241	109,661	2,166	1,071,177
Perth	4,179	494,558	1,359	629,141	449	187,782	5,075	1,796,137
Wellington	6,286	793,795	800	380,594	294	109,672	12,972	5,403,819
Waterloo	3,083	413,489	457	233,905	311	146,335	5,164	2,001,290
Dufferin	3,248	476,735	149	57,871	174	61,404	2,348	870,742
Totals	29,030	3,556,174	5,182	2,423,750	2,291	914,977	34,288	13,704,090
Lincoln	2,051	203,468	220	78,595	109	34,472	203	63,119
Wentworth	3,889	520,300	453	237,739	229	96,112	1,897	910,295
Halton	1,773	228,677	386	163,243	114	44,265	1,487	663,058
Peel	2,967	354,066	395	163,865	323	123,289	1,152	433,963
York	8,080	770,851	1,662	853,800	811	371,618	2,732	1,080,389
Ontario	4,113	507,811	839	347,808	574	213,053	10,715	3,958,277
Durham	3,254	445,612	439	202,487	502	200,938	4,718	2,151,720
Northumberland	4,298	519,350	434	201,596	249	87,176	2,663	1,003,963
Prince Edward	2,431	237,746	124	24,000	44	6,902	96	14,928
Totals	32,856	3,787,881	4,952	2,273,133	2,955	1,177,825	25,663	10,279,712
Lennox and Addington	3,539	450,040	100	33,510	51	13,815	201	48,140
Frontenac	4,280	441,259	136	54,165	117	32,284	307	90,504
Leeds and Grenville	7,638	1,001,622	200	96,641	140	45,808	209	83,947
Dundas	2,561	441,685	101	44,408	40	15,062	69	19,815
Stormont	2,175	295,814	38	16,273	35	12,144	101	21,683
Glengarry	2,627	341,410	57	18,825	33	8,538	21	5,527
Prescott	2,448	299,961	54	18,362	45	11,583	91	36,242
Russell	1,607	184,809	52	15,822	107	34,313	255	81,864
Carleton	6,288	909,095	538	226,019	534	208,890	1,306	473,963
Renfrew	3,746	626,706	111	42,008	116	38,965	570	189,920
Lanark	3,772	619,003	167	71,537	142	56,862	367	141,291
Totals	40,681	5,611,404	1,554	637,570	1,360	478,264	3,497	1,192,896
Victoria	2,944	398,287	408	200,850	264	95,858	2,854	991,617
Peterborough	2,561	335,859	288	112,314	343	112,210	886	320,252
Haliburton	743	107,743	4	1,515	15	3,972	332	77,143
Hastings	6,315	795,217	206	62,441	127	40,950	549	141,718
Total	12,563	1,637,106	906	377,120	749	252,990	4,621	1,530,730
Muskoka	1,283	169,960	28	7,974	68	18,393	849	249,879
Parry Sound	721	115,314	14	3,021	26	6,363	655	190,555
Algoma	665	117,463	21	7,012	27	7,408	449	168,029
Totals	2,669	402,737	63	18,007	121	32,164	1,953	608,463
The Province	164,005	20,867,583	16,946	7,569,837	10,309	3,913,483	95,939	37,695,696

AVERAGE PRODUCE.

TABLE No. XVIII.—Showing by County Municipalities and groups of Counties the average produce of crops per acre in Ontario for the four years 1882-5.

COUNTIES.	Fall Wheat.	Spring Wheat.	Fall and Spring Wheat.	Barley.	Oats.	Rye.	Peas.	Corn (in ear).	Buck-wheat.	Beans.	Hay and Clover.	Potatoes.	Mangel-wurzels.	Carrots.	Turnips.
	Bush.	Bush.	Bush	Bush.	Bush.	Bush.	Bush.	Bush.	Bush.	Bush.	Tons.	Bush.	Bush.	Bush.	Bush.
Essex	19.8	16.0	19.6	26.9	38.4	20.8	19.7	77.4	26.7	27.6	1.60	123.0	419.2	317.0	323.3
Kent	20.7	16.4	20.5	26.6	41.5	24.2	20.9	78.4	25.8	20.3	1.58	148.4	414.8	300.6	366.9
Elgin	20.3	16.2	20.1	27.5	39.4	17.1	19.4	76.7	23.0	23.0	1.52	101.2	372.4	266.8	331.6
Norfolk	20.1	16.0	20.0	28.4	37.1	15.5	21.4	69.6	20.6	19.1	1.45	123.4	389.5	315.6	405.9
Haldimand	18.4	15.4	18.1	22.6	35.7	17.2	18.6	61.2	19.8	22.0	1.41	119.7	333.2	252.7	270.8
Welland	16.5	14.8	16.4	24.7	33.2	17.4	17.1	57.8	20.0	15.8	1.47	106.3	360.8	266.5	366.5
Group	19.7	15.8	19.5	25.2	38.0	16.7	19.8	74.6	21.5	20.4	1.50	121.8	387.3	287.7	363.5
Lambton	20.0	16.0	19.2	25.1	38.4	15.9	19.8	60.5	24.5	22.1	1.54	111.2	358.4	283.3	326.6
Huron	21.5	14.0	19.6	28.6	38.8	15.9	22.4	66.0	19.0	26.3	1.44	137.4	461.4	430.3	370.6
Bruce	20.8	14.1	19.3	27.8	35.9	16.1	23.5	54.2	16.3	19.1	1.27	124.4	461.1	371.1	408.0
Group	21.0	14.4	19.4	27.5	37.7	16.0	22.7	61.3	21.3	22.4	1.40	126.4	444.1	388.8	385.6
Grey	21.4	14.5	17.1	26.2	34.6	17.0	22.2	54.1	19.5	15.2	1.24	131.3	494.9	411.2	426.6
Simcoe	23.4	15.3	20.2	27.5	35.8	19.7	22.7	56.5	17.1	17.7	1.41	137.8	413.7	389.6	411.1
Group	22.7	14.8	18.7	26.9	35.1	19.1	22.4	55.7	18.4	16.4	1.31	134.5	441.4	400.1	422.6
Middlesex	21.0	16.5	20.3	26.2	40.5	17.5	18.8	72.9	20.1	19.2	1.62	110.2	417.6	315.4	359.7
Oxford	20.6	17.8	19.9	31.0	41.4	14.2	22.5	64.8	22.5	30.2	1.58	110.3	488.9	432.9	400.1
Brant	20.8	14.1	20.4	29.5	40.9	14.7	21.0	73.1	22.3	18.2	1.58	122.4	553.3	455.0	494.5
Perth	22.4	15.5	20.4	29.5	42.0	15.8	22.5	71.3	25.3	25.8	1.59	118.3	462.9	418.2	353.9
Wellington	21.2	14.9	18.3	28.7	38.5	18.0	22.8	61.9	23.1	19.5	1.62	126.3	475.7	373.0	416.6
Waterloo	23.0	15.4	21.8	31.6	40.9	17.8	23.9	68.1	21.8	21.2	1.65	134.1	511.8	470.5	387.5
Dufferin	20.8	14.0	16.6	25.6	35.1	17.2	19.9	62.9	18.4	20.9	1.47	146.8	388.4	352.9	370.8
Group	21.5	15.4	19.8	29.0	40.1	16.3	21.9	69.7	22.0	20.9	1.60	122.5	467.7	399.4	399.7
Lincoln	20.4	16.0	19.9	27.2	37.3	15.6	19.6	65.5	28.0	21.2	1.39	99 2	357.3	316.3	310.9
Wentworth	22.0	16.5	21.6	30.5	41.6	18.1	21.3	78.3	24.1	19.5	1.64	133.8	524.8	419.7	479.9
Halton	21.2	15.8	20.5	29.5	39.3	17.1	23.5	63.6	17.9	19.1	1.59	129.0	422.9	388.3	445.9
Peel	24.7	17.6	22.3	29.9	40.6	20.4	21.9	62.3	19.4	28.8	1.60	119.3	414.8	381.7	376.7
York	23.6	17.9	21.3	29.6	42.3	15.6	22.4	68.1	24.4	28.6	1.50	95.4	513.7	458.1	395.5
Ontario	22.9	17.3	18.5	28.4	38.4	18.2	21.4	57.0	20.7	22.7	1.53	123.5	414.6	371.2	369.4
Durham	21.3	17.2	17.7	28.6	38.5	15.5	20.6	55.5	21.0	22.3	1.46	136.9	461.2	400.3	456.1
North'mberl'd.	22.4	14.9	16.6	25.3	34.0	14.2	18.3	55.8	21.9	20.6	1.34	120.8	464.5	350.1	377.0
P. Edward	15.3	13.7	14.1	21.1	29.0	14.1	20.8	42.6	23.3	26.7	1.41	97.8	193.5	156.9	155.5
Group	22.5	16.8	19.5	27.3	38.9	15.3	21.1	59.7	22.9	23.0	1.49	115.3	459.0	398.6	400.6
Lennox & Ad.	18.1	15.7	16.2	23.2	32.3	15.1	20.0	49.0	29.0	20.4	1.35	127.2	335.1	270.9	239.5
Frontenac	19.4	16.5	17.2	25.4	33.0	17.2	19.7	52.7	26.5	29.2	1.37	103.1	398.3	275.9	294.8
Leeds & Gren.	18.6	17.7	18.0	25.8	34.8	18.1	20.2	55.0	25.1	20.3	1.47	131.1	483.3	327.2	401.7
Dundas	17.7	19.6	19.0	31.2	38.7	24.8	22.4	62.5	29.2	26.3	1.58	172.5	439.7	376.6	287.2
Stormont	18.1	19.2	18.9	28.8	36.0	20.9	21.3	51.1	25.9	31.1	1.56	136.0	428.2	347.0	214.7
Glengarry	16.3	16.6	16.6	23.7	36.2	17.8	17.9	39.0	28.6	30.2	1.56	130.0	330.3	258.7	263.2
Prescott	12.0	15.1	15.1	23.2	30.3	18.4	14.6	44.6	22.1	32.7	1.39	122.5	340.0	257.4	398.3
Russell	17.7	17.1	17.2	25.6	34.3	19.4	20.6	45.6	23.0	25.1	1.29	115.0	304.3	320.7	321.0
Carleton	14.2	17.2	16.9	29.4	39.6	18.0	21.9	52.6	23.7	25.1	1.30	144.6	420.1	391.2	362.9
Renfrew	17.5	17.8	17.8	27.6	36.0	20.6	21.1	53.7	24.2	24.5	1.08	167.3	378.5	335.9	333.2
Lanark	19.6	16.9	17.5	29.6	37.1	19.9	24.6	46.6	26.8	24.4	1.43	164.1	428.4	400.4	385.0
Group	18.0	17.2	17.3	25.4	35.7	18.6	20.3	51.6	25.8	26.4	1.39	137.9	410.3	351.7	341.1
Victoria	19.9	15.4	16.3	25.9	34.3	16.4	20.8	57.8	17.5	18.8	1.26	135.3	492.3	363.1	347.4
Peterborough	21.3	14.0	16.0	26.7	35.0	16.5	20.8	53.9	23.3	14.4	1.21	131.1	390.0	327.1	361.5
Haliburton	14.9	11.4	11.6	25.5	27.6	18.0	19.4	49.4	13.0	20.0	1.08	145.0	378.8	264.8	232.4
Hastings	19.1	16.9	17.6	24.9	32.2	16.0	18.0	46.3	26.4	22.8	1.40	125.9	303.1	322.4	258.1
Group	20.1	15.2	16.4	25.5	33.4	16.1	19.8	47.5	24.2	19.1	1.30	130.3	416.2	337.8	331.3
Muskoka	18.2	15.6	15.7	22.1	31.4	20.7	20.5	35.8	25.1	26.0	1.19	132.5	284.8	270.5	294.3
Parry Sound	18.5	17.2	17.2	24.5	33.0	21.2	20.8	35.2	26.1	20.9	1.16	159.9	215.8	244.7	290.9
Algoma	22.5	20.1	20.3	26.9	36.6	17.9	26.6	46.9	28.6	16.3	1.40	176.6	333.9	274.4	374.2
Group	21.6	18.9	19.0	24.6	33.0	20.6	23.2	38.1	26.0	22.4	1.23	150.9	285.8	265.8	311.6
The Province	21.1	16.0	19.1	27.0	37.4	16.9	21.3	67.6	24.1	21.6	1.45	127.2	446.7	379.6	392.9

RATIOS OF AVERAGE PRODUCE.

TABLE No. XIX.—Showing by County Municipalities and groups of Counties the per cent. ratios of total yields in 1885 to average of total yields in Counties and groups for the four years 1882-5; also, the ratios for the Province.

COUNTIES.	Fall Wheat.	Spring Wheat.	Fall and Sp'g Wheat.	Barley.	Oats.	Rye.	Pease.	Corn.	Buckwheat.	Beans.	Hay and Clover.	Potatoes.	Mangel Wurzels.	Carrots.	Turnips.
Essex	104	129	105	112	112	166	105	99	196	167	127	86	140	155	143
Kent	121	208	123	74	106	139	179	88	110	124	119	64	156	170	125
Elgin	95	231	100	84	99	80	168	93	105	101	110	61	131	124	74
Norfolk	115	196	117	72	103	86	133	86	99	57	94	48	115	81	94
Haldimand	132	154	133	101	108	25	119	59	70	34	107	110	108	150	69
Welland	120	149	122	100	92	155	139	89	113	59	103	75	127	124	78
Group	113	177	116	90	104	93	142	92	109	115	110	70	134	132	101
Lambton	119	180	128	97	107	103	175	92	107	116	118	82	92	102	49
Huron	97	94	96	66	99	42	129	91	132	105	114	129	94	85	110
Bruce	89	111	93	82	110	27	111	170	111	150	101	146	98	80	140
Group	99	114	101	78	104	52	124	95	113	118	111	125	95	86	122
Grey	66	58	61	83	97	60	101	104	129	111	98	146	67	91	112
Simcoe	101	74	93	73	99	44	101	89	102	109	83	132	112	87	115
Group	89	64	79	78	98	46	101	93	117	110	92	139	94	89	113
Middlesex	85	176	96	61	97	82	152	84	102	81	108	62	106	88	89
Oxford	97	115	101	66	97	57	145	82	96	61	109	50	88	61	96
Brant	95	130	95	107	94	77	124	78	97	33	91	95	137	95	123
Perth	105	65	97	61	94	80	125	72	128	37	103	94	121	102	88
Wellington	95	62	84	81	106	48	114	78	24	144	104	101	83	66	99
Waterloo	103	86	101	78	102	67	124	48	126	94	88	110	70	70	89
Dufferin	102	66	83	106	115	25	115	155	173	71	100	106	145	71	88
Group	96	91	95	78	100	56	126	80	98	54	102	88	103	80	96
Lincoln	117	124	118	74	101	39	121	100	54	93	125	76	99	95	87
Wentworth	110	123	111	94	93	18	129	74	109	61	96	97	106	100	132
Halton	117	89	114	81	101	7	111	70	63	129	102	122	108	63	101
Peel	127	71	112	101	107	25	120	89	112	36	95	93	60	49	76
York	102	72	92	95	96	28	110	89	22	86	96	76	113	92	127
Ontario	79	66	69	82	98	33	105	57	64	49	99	97	91	93	111
Durham	83	64	65	92	91	33	93	63	134	81	92	84	94	93	116
Northumberland	105	70	81	97	101	61	97	64	121	57	107	84	104	79	143
Prince Edward	91	99	97	90	97	82	200	62	143	61	133	102	137	84	72
Group	109	71	92	92	98	51	112	76	122	65	103	90	102	86	116
Lennox and Add	91	90	90	85	114	52	113	86	94	44	123	127	38	91	108
Frontenac	94	107	104	81	96	45	91	107	102	113	107	66	120	133	229
Leeds and Gren.	79	114	102	73	105	34	95	75	104	82	125	116	92	67	91
Dundas	24	141	107	65	118	58	84	78	133	57	117	124	110	46	64
Stormont	39	120	104	71	95	25	82	92	119	63	108	86	122	21	107
Glengarry	50	132	121	71	113	2	101	96	58	42	88	111	143	73	174
Prescott	61	97	96	93	109	68	95	105	110	65	78	108	72	74	156
Russell	15	103	97	100	98	24	72	76	61	97	80	122	61	121	102
Carleton	28	100	94	91	94	47	90	122	115	100	102	103	94	80	110
Renfrew	15	95	90	106	100	70	96	69	149	121	62	115	81	57	105
Lanark	79	107	100	118	110	37	113	72	88	65	115	111	69	81	93
Group	65	105	98	82	104	47	97	87	102	85	106	109	91	81	115
Victoria	93	62	68	93	100	51	100	86	48	52	100	97	75	110	113
Peterborough	80	67	72	79	104	63	107	133	126	106	96	99	118	89	113
Haliburton	30	101	96	114	101	46	90	90	86	162	95	72	20	83	114
Hastings	78	96	90	69	104	56	102	58	112	93	102	107	101	187	154
Group	84	71	75	78	102	57	103	66	109	93	100	101	92	112	117
Muskoka	177	84	87	116	91	47	107	119	84	164	103	95	101	98	126
Parry Sound	160	95	97	112	126	35	97	45	90	62	103	104	60	90	117
Algoma	40	54	53	123	86	45	101	80	74	56	98	104	111	166	87
Group	65	64	64	117	100	41	102	87	85	113	101	100	98	112	113
The Province	101	85	95	84	101	54	113	87	107	99	104	101	101	88	109

RATIOS OF AVERAGE PRODUCE.

TABLE No. XX.—Showing by County Municipalities and groups of Counties the per cent. ratios of average yields per acre in 1885 to average yields per acre in Counties and groups for the four years 1882-5; also, the ratios for the Province.

COUNTIES.	Fall Wheat.	Spring Wheat.	Fall and Spg Wheat.	Barley.	Oats.	Rye.	Peas.	Corn.	Buckwheat.	Beans.	Hay and Clover.	Potatoes.	Mangel-wurzels.	Carrots.	Turnips
Essex	123	92	115	103	103	102	92	92	122	118	111	83	95	116	113
Kent	124	95	121	109	100	124	104	85	92	91	108	•69	137	140	136
Elgin	112	87	108	107	97	80	115	96	90	100	106	68	126	120	107
Norfolk	117	95	115	102	101	98	93	98	103	82	96	55	114	98	94
Haldimand	136	88	129	127	103	94	105	102	75	68	104	100	114	131	98
Welland	127	78	119	102	98	107	101	109	118	84	99	76	123	142	123
Group	122	89	118	113	101	101	103	93	105	93	105	73	120	124	111
Lambton	141	91	122	122	100	109	114	107	94	96	110	85	111	111	84
Huron	120	58	95	99	97	94	114	124	112	96	108	129	104	116	110
Bruce	108	79	98	101	103	155	105	125	104	115	95	148	133	126	133
Group	120	72	101	105	100	111	109	110	100	98	105	127	111	117	121
Grey	92	60	70	93	95	132	100	111	102	99	91	145	104	107	107
Simcoe	108	62	90	96	92	101	93	88	117	113	81	133	107	95	108
Group	104	61	83	94	94	107	97	95	109	104	86	139	104	101	107
Middlesex	112	75	95	105	93	114	114	96	104	102	104	65	103	91	91
Oxford	118	65	97	98	93	106	108	100	89	84	106	55	89	74	93
Brant	101	67	98	109	89	97	103	94	100	84	95	95	113	111	107
Perth	123	45	94	97	94	108	116	98	91	78	99	99	113	102	90
Wellington	112	54	83	98	97	83	106	113	91	77	101	103	85	94	96
Waterloo	109	57	97	101	95	97	107	79	92	94	89	112	86	86	89
Dufferin	105	66	83	112	108	58	110	111	109	86	93	98	103	99	83
Group	113	62	93	102	95	93	109	97	96	91	99	90	99	93	94
Lincoln	126	78	118	104	101	118	97	104	78	94	120	90	108	107	98
Wentworth	115	81	110	105	97	96	108	92	104	103	96	112	102	104	118
Halton	124	62	112	106	100	102	92	89	67	105	102	126	111	84	93
Peel	124	72	111	112	103	86	99	112	116	83	93	95	64	61	75
York	114	65	94	104	90	103	96	117	82	87	91	76	114	117	116
Ontario	110	62	71	96	91	85	101	70	97	110	97	104	105	113	101
Durham	110	61	63	98	90	81	100	77	95	87	93	91	104	101	103
Northumberland	108	65	77	108	91	101	97	66	95	99	101	89	93	91	116
Prince Edward	138	71	80	103	93	116	119	79	123	88	116	115	116	127	193
Group	119	64	91	104	93	99	100	89	107	94	99	95	105	103	105
Lennox and Add	94	77	81	103	99	92	97	112	94	77	112	122	90	83	125
Frontenac	109	91	93	103	97	103	94	104	107	109	101	72	139	140	132
Leeds and Gren.	109	111	110	105	100	91	100	84	104	85	118	121	103	84	122
Dundas	66	107	105	93	108	79	81	80	116	76	108	123	99	66	104
Stormont	87	108	107	97	92	48	88	117	116	129	103	92	105	58	116
Glengarry	121	113	114	105	107	112	99	128	101	83	88	106	151	77	114
Prescott	150	95	95	90	99	109	95	110	100	67	72	104	74	78	126
Russell	65	108	106	94	86	103	86	88	78	110	73	115	99	104	109
Carleton	101	102	103	105	87	93	92	128	112	108	96	103	98	92	98
Renfrew	94	92	92	96	90	94	88	74	109	154	62	110	78	67	89
Lanark	109	93	95	105	92	104	104	86	97	86	106	107	86	109	108
Group	107	98	99	102	96	94	94	98	103	99	99	109	101	93	105
Victoria	120	63	75	98	89	99	94	86	57	106	93	94	109	105	88
Peterborough	93	58	67	89	90	98	94	97	95	69	87	98	110	90	91
Haliburton	75	107	105	98	103	80	84	101	77	100	92	82	79	104	93
Hastings	95	82	85	104	100	91	106	79	97	132	99	123	110	140	144
Group	102	67	75	99	94	93	97	84	95	93	94	107	107	106	94
Muskoka	121	87	89	93	84	75	95	93	76	125	91	87	97	87	94
Parry Sound	108	106	107	97	105	84	96	170	86	96	92	120	139	123	102
Algoma	89	75	75	102	78	92	94	106	87	123	86	99	90	109	67
Group	95	81	82	97	89	79	95	103	81	125	90	98	101	99	89
The Province	116	71	96	103	96	96	102	95	103	93	99	104	102	101	102

RATIOS OF AREAS UNDER CROP.

TABLE No. XXI.—Showing by County Municipalities and groups of Counties the number of acres under the various crops in Ontario in 1885 per 1,000 acres of cleared land; also, the Province ratios for four years.

COUNTIES.	Fall Wheat.	Spring Wheat.	Barley.	Oats.	Rye.	Pease.	Corn.	Buck-wheat.	Beans.	Hay and Clover.	Potatoes.	Mangel-wurzels.	Carrots.	Turnips.
Essex	154.2	14.9	12.4	154.5	7.5	20.6	176.0	5.2	3.8	213.0	16.6	1.5	.5	1.6
Kent	218.5	20.6	14.6	120.5	2.0	39.0	96.6	3.6	52.0	201.2	12.8	1.1	.6	1.3
Elgin	152.4	21.8	13.8	123.3	4.8	49.4	56.0	5.3	4.6	196.3	10.7	1.0	.5	1.0
Norfolk	146.2	9.2	18.9	118.9	28.8	72.2	55.0	20.9	2.9	181.5	15.6	.7	.4	2.7
Haldimand	162.2	27.6	61.8	110.6	1.7	63.1	5.7	2.8	.5	257.0	9.7	.5	.4	.3
Welland	140.5	27.4	27.6	111.0	7.0	30.8	35.6	10.5	4.2	296.8	17.3	.9	.4	.6
Group	165.7	19.9	23.7	122.9	8.5	46.9	71.3	7.9	13.6	218.5	13.5	.9	.5	1.3
Lambton	117.5	63.3	49.0	156.1	1.0	39.3	26.0	2.2	1.8	224.3	12.9	1.2	.6	.7
Huron	114.7	80.3	34.0	135.4	.3	59.9	2.5	.5	.2	180.2	10.4	2.3	.8	13.4
Bruce	111.9	54.5	36.1	136.6	.2	88.8	1.2	.6	.3	196.8	12.2	.8	.5	14.0
Group	114.3	67.8	37.9	140.1	.4	65.6	7.0	.9	.6	195.2	11.6	1.6	.6	10.9
Grey	43.3	98.0	41.1	144.8	.6	82.0	.5	.7	.3	221.8	14.1	.4	1.0	17.1
Simcoe	128.2	104.1	46.9	137.2	2.7	74.4	1.5	.5	.2	173.5	16.2	1.7	1.3	7.4
Group	81.3	100.8	43.7	141.4	1.6	78.6	.9	.6	.2	200.2	15.1	1.0	1.1	12.8
Middlesex	120.9	70.8	18.3	136.3	.7	43.2	18.3	.8	.7	183.9	11.7	2.4	.9	3.2
Oxford	99.9	68.1	34.2	149.0	2.1	47.7	21.1	2.2	.6	192.1	10.0	2.8	.9	15.3
Brant	179.4	20.4	85.4	110.2	4.3	55.9	22.9	4.3	1.9	186.2	14.1	2.3	1.2	14.8
Perth	115.7	79.1	34.5	142.2	.5	61.5	1.3	.5	.1	193.0	11.3	4.2	1.3	14.3
Wellington	63.4	75.1	65.0	155.4	1.3	88.7	.9	.1	.1	193.2	14.7	1.9	.5	31.7
Waterloo	168.4	51.7	50.5	146.0	2.0	61.7	4.4	.6	.1	182.4	13.1	1.6	1.1	22.3
Dufferin	75.0	129.0	55.5	151.3	2.6	65.9	.4	.7	.....	197.6	20.4	1.2	.7	14.5
Group	111.7	71.2	43.9	143.1	1.6	60.4	10.1	1.1	.4	189.5	13.0	2.5	.9	16.1
Lincoln	141.8	30.7	21.7	118.6	1.5	33.4	39.2	3.4	1.1	274.9	11.7	1.4	.7	1.2
Wentworth	152.0	23.1	48.3	127.7	1.0	50.7	18.6	3.7	.4	218.9	16.3	2.3	1.1	10.3
Halton	137.0	34.3	53.4	104.2	.3	68.8	4.8	.9	.2	204.1	10.2	2.2	.5	9.6
Peel	128.8	63.0	118.2	121.6	2.7	62.5	1.2	1.1	.1	166.1	12.7	1.6	1.1	5.0
York	97.8	79.9	113.6	148.1	1.7	70.0	2.5	.2	.4	186.3	20.3	4.0	1.6	7.4
Ontario	30.2	163.3	89.0	142.9	4.8	73.9	5.8	.6	.6	159.3	11.6	2.2	1.4	35.9
Durham	9.9	183.4	142.2	120.1	9.5	74.0	5.9	3.8	1.2	163.3	11.4	1.5	1.7	20.1
Northumberland	31.9	119.7	126.2	97.5	26.4	63.4	11.5	14.8	1.2	179.6	13.4	1.6	.7	10.8
Prince Edward	10.7	66.2	205.7	76.1	40.5	60.1	29.0	36.5	1.5	186.1	12.2	.8	.2	.2
Group	75.6	95.1	106.2	121.5	9.4	64.3	10.7	6.3	.7	186.8	13.9	2.2	1.1	12.8
Lennox & Addingt'n	11.3	43.4	177.5	114.4	18.9	48.4	9.1	10.7	.5	222.4	18.3	.2	.3	.9
Frontenac	11.1	53.2	78.7	119.6	11.7	54.1	8.7	6.5	1.8	301.9	19.0	.6	.5	2.6
Leeds & Grenville	12.9	36.5	20.8	158.1	10.0	15.6	11.1	14.3	1.0	277.0	18.8	.5	.3	.4
Dundas	5.4	44.1	42.9	219.4	11.0	14.5	10.3	12.0	.9	264.5	19.3	.8	.2	.3
Stormont	4.4	40.2	17.7	219.4	3.3	24.2	9.8	20.7	.7	277.4	18.2	.4	.1	.8
Glengarry	3.1	63.9	10.1	224.5	.....	51.2	4.8	4.5	.4	240.1	20.2	.4	.2	.2
Prescott	.4	66.0	16.8	223.3	2.0	96.8	11.4	16.8	4.9	246.8	21.1	.4	.4	.9
Russell	1.0	57.0	17.5	256.6	1.2	53.7	5.5	10.3	3.6	259.9	23.1	.4	1.7	3.2
Carleton	2.8	88.5	22.2	219.9	17.2	50.8	4.4	15.1	1.8	224.0	24.2	2.0	1.8	5.6
Renfrew	1.2	112.8	4.9	170.2	26.2	95.3	2.0	6.3	1.7	252.4	16.8	.5	.4	2.9
Lanark	10.7	59.6	9.2	135.8	9.5	42.9	4.1	22.1	.7	220.5	14.1	.5	.4	1.1
Group	7.1	61.0	38.2	174.5	11.9	47.3	7.3	13.0	1.4	252.5	18.9	.7	.6	1.8
Victoria	33.0	155.3	106.3	161.8	3.3	69.4	1.9	1.6	.2	168.5	13.0	1.2	1.2	15.7
Peterborough	41.4	144.1	52.9	140.1	11.3	75.4	2.4	3.9	1.4	188.8	11.9	1.4	1.6	5.1
Haliburton	1.3	51.0	13.3	168.5	7.3	62.9	5.2	13.5	1.8	372.2	25.5	.....	.5	16.0
Hastings	23.3	71.3	89.3	129.1	36.2	51.6	13.3	11.4	.6	210.2	17.6	.6	.5	1.9
Group	30.4	115.6	81.9	143.1	18.7	63.8	6.7	6.5	.7	197.2	14.9	1.0	1.0	7.3
Muskoka	1.6	33.2	13.2	160.0	6.1	57.8	3.9	5.2	.8	414.4	28.0	.6	1.5	23.0
Parry Sound	3.0	67.6	29.2	197.3	8.4	50.6	1.0	9.3	.6	381.7	23.5	.2	.7	28.2
Algoma	6.0	197.8	24.4	129.1	1.9	117.8	2.1	1.9	.2	362.9	25.5	.9	1.5	21.4
Group	3.1	85.6	20.3	161.3	5.6	71.8	2.7	5.4	.6	392.4	26.2	.6	1.3	23.9
THE PROVINCE—1885	80.6	73.6	55.1	142.2	7.2	59.5	15.5	5.7	2.3	208.9	14.7	1.5	.8	9.4
THE PROVINCE—1884	80.5	67.2	65.2	138.0	9.6	53.2	16.3	6.7	2.3	204.3	15.7	1.7	1.0	9.7
THE PROVINCE—1883	104.1	55.6	71.8	134.6	17.8	51.5	20.3	6.4	2.5	223.1	15.8	1.6	1.1	9.3
THE PROVINCE—1882	116.8	57.7	83.4	136.4	18.2	55.1	20·3	4.9	1.9	179.5	15.8	1.5	1.0	7.8
THE PROVINCE—1882-5	95.2	63.7	68.7	137.9	13.1	54.9	18.0	5.8	2.3	204.3	15.5	1.6	1.0	9.1

RATIOS OF LIVE STOCK—WOOL AVERAGES.

TABLE No. XXII.—Showing by County Municipalities and groups of Counties the averages of number and value of Live Stock in Ontario in 1885, per 1,000 acres of cleared land; also, the average pounds of Wool per fleece in 1885, and for the four years 1882-5.

COUNTIES.	Horses.	Cattle.	Sheep.	Pigs.	Poultry.	Value per 1,000 Acres.	Average Pounds of Wool per Fleece.			
							Coarse Wool.		Fine Wool.	
							1885.	1882-5.	1885.	1882-5.
						$				
Essex	77.5	185.9	142.1	241.9	1127.7	11,164	5.57	5.48	5.27	5.12
Kent	62.9	207.5	134.3	155.6	786.4	10,818	5.95	5.67	4.82	5.07
Elgin	53.4	190.5	136.2	103.4	615.7	9,847	5.74	5.62	5.20	5.31
Norfolk	51.6	164.7	129.7	100.6	643.2	8,376	5.38	5.33	5.01	4.78
Haldimand	52.9	166.1	167.1	85.8	602.0	9,310	6.26	6.01	5.16	4.89
Welland	55.1	138.9	177.8	69.2	667.7	8,753	5.49	5.28	4.39	4.50
Group	58.7	179.3	145.3	126.8	733.5	9,771	5.77	5.60	4.91	4.91
Lambton	53.7	227.4	168.9	69.3	564.3	10,463	5.90	5.75	5.21	5.28
Huron	51.3	207.4	166.0	55.5	609.7	10,584	5.70	5.67	5.29	5.35
Bruce	45.9	201.7	205.6	59.5	501.1	9,476	5.69	5.63	5.44	5.43
Group	49.9	209.6	180.4	59.8	562.5	10,174	5.74	5.68	5.34	5.37
Grey	44.5	200.7	232.7	67.0	517.8	9,183	5.58	5.46	5.09	5.22
Simcoe	53.2	172.5	199.3	99.7	591.5	9,339	5.86	5.47	5.23	5.22
Group	48.4	188.1	217.7	81.7	550.8	9,253	5.69	5.46	5.16	5.22
Middlesex	53.3	226.5	123.0	70.3	645.0	11,602	5.96	5.84	5.66	5.56
Oxford	51.4	215.4	102.3	77.5	562.1	11,035	5.81	5.77	5.27	5.27
Brant	52.3	161.8	158.6	78.4	524.4	10,029	6.03	5.79	5.29	5.49
Perth	51.1	226.7	160.3	60.3	658.0	10,728	5.69	5.58	5.41	5.40
Wellington	48.4	187.4	208.6	71.5	540.1	9,869	5.92	5.70	5.02	5.17
Waterloo	52.3	160.2	176.3	67.2	546.7	9,395	5.48	5.54	5.02	4.81
Dufferin	48.7	182.0	210.2	86.6	593.0	8,705	5.47	5.59	5.40	5.44
Group	51.2	201.7	157.7	71.6	590.3	10,454	5.78	5.70	5.24	5.28
Lincoln	56.1	143.1	123.2	89.0	646.5	9,246	5.45	5.21	5.11	4.86
Wentworth	56.6	158.5	124.1	77.0	531.9	9,666	5.96	5.64	5.03	4.99
Halton	48.3	175.4	125.5	69.0	503.9	9,657	6.49	6.31	5.35	5.47
Peel	49.5	136.4	116.1	86.5	628.5	9,109	6.69	6.62	5.44	5.40
York	60.0	126.1	128.2	86.1	556.2	9,987	6.20	6.07	5.61	5.47
Ontario	55.3	152.4	139.5	75.9	528.7	10,561	6.55	6.26	5.54	5.59
Durham	53.2	137.4	129.0	66.1	561.4	8,958	5.99	5.80	6.20	5.81
Northumberland	52.4	147.7	127.6	62.9	513.2	7,802	5.77	5.66	5.15	5.34
Prince Edward	57.0	107.4	87.6	39.1	541.3	6,892	5.32	5.41	4.95	4.98
Group	54.7	141.7	124.5	73.4	553.0	9,212	6.12	5.95	5.43	5.35
Lennox & Addington	48.9	159.8	134.0	43.1	440.5	6,775	5.40	5.14	5.09	5.08
Frontenac	42.6	148.6	165.5	39.8	417.8	6,587	5.23	4.84	5.24	4.96
Leeds & Grenville	44.2	193.6	169.9	52.7	572.2	7,469	5.03	4.81	5.12	4.94
Dundas	57.5	212.7	150.3	71.8	891.3	8,895	4.95	4.91	4.82	4.78
Stormont	58.6	236.3	145.9	64.0	738.7	9,135	5.01	4.95	5.09	5.09
Glengarry	60.6	237.7	187.9	69.3	622.3	9,287	4.62	4.52	4.86	4.75
Prescott	58.3	197.8	180.8	83.9	554.5	9,040	4.89	4.64	5.19	4.91
Russell	61.0	225.2	189.3	98.9	730.3	10,162	4.82	4.65	5.23	4.96
Carleton	49.3	173.9	169.5	76.4	703.6	8,545	5.11	4.91	5.02	4.96
Renfrew	43.5	192.0	246.8	73.4	442.7	7,195	4.34	4.35	4.32	4.40
Lanark	35.4	158.3	216.2	49.7	551.3	6,352	4.89	4.73	4.68	4.63
Group	47.9	186.5	180.3	61.5	580.4	7,753	4.90	4.74	4.93	4.84
Victoria	52.4	174.1	165.2	73.7	489.3	8,700	5.45	5.43	5.48	5.66
Peterborough	47.2	167.7	145.9	66.1	549.2	7,875	5.40	5.28	4.85	4.92
Haliburton	34.4	255.5	285.5	59.1	518.9	8,347	5.06	4.83	4.48	4.12
Hastings	49.8	178.7	146.1	58.1	454·5	8,011	5.11	4.88	4.58	4.60
Group	49.3	176.8	156.2	65.0	493.0	8,188	5.29	5.17	4.90	4.87
Muskoka	38.1	274.8	207.6	61.4	490.0	9,701	5.40	5.41	5.13	5.13
Parry Sound	32.4	229.9	148.2	67.8	437.4	9,178	5.62	5.96	4.84	5.48
Algoma	38.9	256.9	176.3	133.2	773.9	10,172	6.03	5.98	5.57	4.99
Group	36.8	258.5	184.1	82.1	551.6	9,691	5.62	5.65	5.10	5.19
The Province ... 1885	51.5	182.1	161.7	75.7	583.7	9,275	5.58	5.45	5.14	5.10
The Province ... 1882-5	51.0	172.2	175.7	82.7	562.2	9,091				

AREA AND POPULATION.

TABLE No. XXIII.—Showing by County Municipalities and groups of Counties the Area and Population (Rural and Urban) of Ontario, as returned by Municipal Assessors for the year 1885.

Counties.	Rural Areas.							Population.		
	Acres of Assessed Land.			Acres cleared.	Acres woodland.	Acres swamp marsh or waste.	Acres orchard and garden.	Rural.	*Urban.	Totals.
	Resident.	Non-resident.	Total occupied.							
Essex	398,190	29,272	427,462	182,179	226,596	18,687	6,015	31,263	14,980	46,243
Kent	537,362	28,955	566,317	273,289	262,641	30,387	7,615	31,766	16,611	48,377
Elgin	434,641	5,689	440,330	255,884	171,258	13,188	6,881	26,048	3,337	29,385
Norfolk	386,590	10,214	396,804	222,559	151,671	22,574	8,024	24,335	5,284	29,619
Haldimand	278,916	120	279,036	196,387	72,688	9,961	4,528	17,110	3,365	20,475
Welland	221,147	3,938	225,085	155,176	59,184	10,725	6,781	17,384	10,912	28,296
Totals	2,256,846	78,188	2,335,034	1,285,474	944,038	105,522	39,844	147,906	54,489	202,395
Lambton	598,452	63,084	661,536	244,610	402,178	14,748	5,596	30,200	17,340	47,540
Huron	781,731	16,719	798,450	516,169	195,831	86,450	8,478	49,040	16,320	65,360
Bruce	770,428	55,472	825,900	404,546	363,488	57,866	5,851	42,008	15,553	57,561
Totals	2,150,611	135,275	2,285,886	1,165,325	961,497	159,064	19,925	121,248	49,213	170,461
Grey	1,027,768	47,429	1,075,197	526,226	387,050	161,921	7,105	55,134	8,403	63,537
Simcoe	889,107	72,240	961,347	425,957	482,837	52,553	4,450	48,113	21,580	69,693
Totals	1,916,875	119,669	2,036,544	952,183	869,887	214,474	11,555	103,247	29,983	133,230
Middlesex	752,155	5,638	757,793	499,681	237,416	20,696	11,000	51,303	†10,161	61,464
Oxford	470,269	1,395	471,664	333,634	110,246	27,784	8,666	29,778	14,425	44,203
Brant	212,165	3,661	215,826	168,746	29,723	17,357	4,651	16,750	3,316	20,066
Perth	514,764	4,157	518,921	350,695	126,012	42,214	4,626	30,801	9,279	40,080
Wellington	618,751	8,211	626,962	419,075	120,440	87,447	4,772	35,511	11,931	47,442
Waterloo	304,077	2,056	306,133	230,924	59,740	15,469	5,295	24,808	18,292	43,100
Dufferin	335,387	22,274	357,661	172,618	104,180	80,863	1,583	16,243	3,470	19,713
Totals	3,207,568	47,392	3,254,960	2,175,373	787,757	291,830	40,593	205,194	70,874	276,068
Lincoln	188,186	2,718	190,904	148,119	35,719	7,066	8,075	14,584	5,441	20,025
Wentworth	265,904	8,403	274,307	206,611	50,021	17,675	9,324	24,369	4,435	28.804
Halton	223,192	1,531	224,723	168,126	43,629	12,968	4,991	14,160	6,573	20,733
Peel	287,616	379	287,995	229,738	47,454	10,803	4,128	17,944	4,691	22,635
York	533,118	8,398	541,516	404,523	82,715	54,278	7,744	43,441	12,068	55,509
Ontario	480,321	15,962	496,283	328,165	115,540	52,578	5,330	32,555	12,821	45,376
Durham	363,233	3,257	366,490	266,107	71,349	29,034	3,825	21,895	11,001	32,896
N'thumb'd	430,201	3,785	433,986	303,880	107,266	22,840	6,683	25,975	10,240	36,215
Prince Ed.	227,767	4,233	232,000	177,259	48,029	6,712	6,696	14,568	3,307	17,875
Totals	2,999,538	48,666	3,048,204	2,232,528	601,722	213,954	56,796	209,491	70,577	280,068
Len. & Ad.	365,518	38,522	404,040	202,033	148,319	53,688	2,671	18,899	4,746	23,645
Frontenac	586,515	81,508	668,023	206,515	370,792	90,716	1,966	21,145	1,330	22,475
L'ds & Gren	739,308	8,516	747,824	392,486	253,333	102,005	3,062	38,286	17,450	55,736
Dundas	234,695	2,518	237,213	133,776	70,837	32,600	1,262	14,983	2,804	17,787
Stormont	248,128	2,143	250,271	112,815	126,559	10,897	920	15,908	5,397	21,305
Glengarry	287,032	152	287,184	136,832	102,847	47,505	525	17,677	966	18,643
Prescott	269,421	16,959	286,380	120,797	126,755	38,828	166	17,653	2 380	20,033
Russell	213,088	38,045	251,133	74,436	175,372	1,325	164	14,240	.....	14,240
Carleton	557,600	16,444	574,044	259,816	186,659	127,569	470	30,661	1,572	32,233
Renfrew	807,450	49,512	856,962	232,662	567,436	56,864	842	28,517	7,961	36,478
Lanark	607,371	55,924	663,295	277,855	271,518	113,922	1,097	20,628	12,513	33,141
Totals	4,916,126	310,243	5,226,369	2,150,023	2,400,427	675,919	13,145	238,597	57,119	295,716
Victoria	528,867	36,207	565,074	233,861	217,095	114,118	1,818	21,546	8,579	30.125
Peterboro'	485,458	41,840	527,298	218,468	240,302	68,528	1,969	18,614	11,328	29,942
Haliburton	513,211	24,839	538,050	25,435	486,981	25,634	37	5,046	.....	5,046
Hastings	793,589	133,797	927,386	313,823	541,386	72,177	5,014	32,719	8,363	41,082
Totals	2,321,125	236.683	2,557,808	791,587	1,485,764	280,457	8,838	77,925	28.270	106,195
Muskoka	456,840	52,799	509,639	49,677	384,604	75,358	349	10,581	2,530	13,111
Parry S'd	219,874	28,654	248,528	26,671	217,468	4,389	56	5,222	.....	5,222
Algoma	226,151	46,176	272,327	27,442	229,840	15,045	165	7,143	6,097	13,240
Totals	902,865	127,629	1,030,494	103,790	831,912	94,792	570	22,946	8,627	31,573
Prov '85	20,671,554	1,103,745	21,775,299	10,856,283	8,883,004	2,036,012	191,266	1,126,554	369,152	1,495,706
Prov '84	20,567,632	1,144,684	21,712,316	10,736,086	8,914,719	2,061,511	192,837	1,117.880	363,869	1,481,749

* Cities are not included. † London East annexed to London.

POPULATION.

TABLE No. XXIV.—Showing the population of Cities in Ontario as returned by Municipal Assessors for the ten years 1876-85; also the total population of Cities, Towns, Villages and Townships for the same period.

MUNICIPALITIES.	1885.	1884.	1883.	1882.	1881.	1880.	1879.	1878.	1877.	1876.
Cities—										
Belleville	11,000	9,467	9,478	10,021	10,038	9,987	9,991	9,112	9,112	9,241
Brantford	12,167	11,783	10,976	10,865	10,555	10,587	10,587	10,792	10,631	9,424
Guelph	10,216	10,134	10,190	9,854	10,057	10,260	10,072	9,918	9,680	9,017
Hamilton	39,985	39,216	38,196	36,946	35,977	35,009	34,268	33,511	33,511	32,609
Kingston	15,237	15,297	14,611	14,611	14,260	13,929	14,358	14,072	13,253	12,786
London	26,254	20,970	20,305	20,411	20,176	19,941	19,666	19,186	18,808	18,196
Ottawa	32,792	30,791	26,228	25,558	24,791	24,025	24,015	25,000	24,500	24,400
St. Catharines	9,882	9,931	10,050	9,576	10,026	10,475	10,475	11,079	10,143	9,820
St. Thomas	11,157	10,811	10,163	9,644	8,853	8,063	7,217	6,446	5,954	5,527
Stratford	8,764	8,698	8,472	9,000	8,954	8,912	8,885	8,645	8,442	7,729
Toronto	111,800	105,211	91,796	81,372	76,934	75,110	73,813	70,867	67,386	71,693
Totals	289,254	272,309	250,465	237,858	230,621	226,298	223,347	218,628	211,420	210,442
Towns and Villages	369,152	363,869	344,035	336,934	328,685	326,297	321,331	309,827	300,252	283,324
Townships	1,126,554	1,117,880	1,115,841	1,120,574	1,134,192	1,131,288	1,128,889	1,117,580	1,108,671	1,088,753
	1,784,960	1,754,058	1,710,341	1,695,366	1,693,498	1,683,883	1,673,567	1,646,035	1,620,343	1,582,519

NOTE.—The city of Stratford was incorporated March 30th, 1885.

MUNICIPALITIES.

TABLE No XXV.—Showing the number of Township, City, Town and Village Municipalities in Ontario for the ten years 1876-85.

MUNICIPALITIES.	1885.	1884.	1883.	1882.	1881.	1880.	1879.	1878.	1877.	1876.
Townships	445	445	442	438	433	430	427	424	418	416
Cities, Towns and Villages	206	205	200	201	198	193	189	182	174	166
Totals	651	650	642	639	631	623	616	606	592	582

MARKET PRICES.

TABLE No. XXVI.—Showing the average prices of Agricultural Products at the leading markets of Ontario for July–December in 1885, and the average for the half-year, and for the Province.

—	Belleville.	Brantford.	Brockville.	Chatham.	Cobourg.	Guelph.	Kingston.	Lindsay.	London.	Ottawa.	St. Thomas.	Stratford.	Toronto.	The Prov.	
														1885.	1884.
FALL WHEAT, per bush.:	cts.	cts.	cts.	cts.	cts.	cts.	cts.	cts.	cts.	cts.	cts.	cts.	cts.	cts.	cts.
July	82.5	84.0	87.5	85.0	84.0	85.2	80.8	83.0	84.4	95.0	85.0	80.0	85.2	84.9	98.9
August	83.3	82.0	88.8	83.8	85.0	85.0	81.2	79.8	79.2	82.5	84.8	80.5	81.9	82.3	89.2
September	80.0	78.0	92.5	79.4	85.0	81.6	77.5	73.1	75.7	82.5	80.3	79.0	80.6	79.4	78.4
October	80.0	81.9	91.3	85.3	88.4	82.6	82.4	78.9	73.5	81.7	80.1	84.2	86.0	81.1	75.2
November	80.0	85.1	92.5	81.0	86.8	81.5	77.5	79.6	73.1	88.1	81.0	83.6	85.7	81.7	71.5
December	80.0	78.4	92.5	76.7	87.5	81.0	81.6	75.0	73.4	85.5	80.0	77.7	83.0	79.7	70.5
Average	80.7	81.7	90.8	81.8	86.2	82.7	81.6	78.3	76.5	86.4	82.0	80.9	83.8	81.5	80.5
SPRING WHEAT, per bush.:															
July	.....	84.0	.....	.....	84.0	85.2	84.5	83.0	84.8	87.5	.....	.....	85.2	84.8	100.6
August	80.0	82.0	.....	.....	85.0	85.0	83.8	79.8	80.6	82.5	.....	.....	82.8	81.7	90.4
September	80.0	78.0	.....	.....	85.0	81.6	82.5	73.1	77.0	82.5	.....	.....	81.5	79.1	80.0
October	80.6	81.9	.....	.....	86.4	82.6	82.6	78.9	74.9	81.7	.....	75.0	85.8	80.8	75.2
November	80.0	85.1	.....	.....	86.8	81.5	77.5	78.4	73.5	89.6	.....	77.1	85.6	81.3	72.1
December	80.0	77.4	.....	.....	87.5	81.0	81.6	75.0	70.9	88.5	.....	68.8	80.0	77.2	70.7
Average	80.1	81.6	.....	.....	85.8	82.7	84.9	78.1	76.8	86.0	.....	73.4	83.5	80.6	81.4
BARLEY, per bush.:															
July	57.5	54.0	52.5	48.0	65.0	51.5	.....	45.0	49.2	51.3	50.0	44.4	55.0	51.3	55.1
August	55.0	54.8	51.3	48.0	65.0	52.7	56.5	42.5	49.9	50.0	51.8	47.5	55.0	51.8	54.0
September	55.0	51.5	52.5	46.6	64.1	54.1	55.0	54.4	51.5	50.0	57.5	47.5	62.4	54.5	55.2
October	56.4	53.0	47.5	48.9	61.6	54.0	55.8	56.0	55.2	54.2	52.0	48.5	68.8	56.3	53.0
November	60.5	56.2	44.2	48.7	67.8	56.0	50.0	60.0	51.6	57.5	48.3	50.4	73.6	57.0	53.0
December	60.5	60.3	47.5	48.0	68.8	66.5	53.5	70.0	51.6	57.5	50.0	50.4	75.5	59.0	52.2
Average	57.6	55.1	49.4	48.0	65.2	56.1	55.7	54.1	51.1	53.9	51.7	48.3	67.1	55.2	53.6
OATS, per bush.:															
July	44.0	31.0	34.7	30.0	40.0	35.5	35.0	30.3	31.0	38.0	30.8	30.4	36.4	33.0	40.2
August	35.0	29.7	34.9	29.8	40.0	33.8	35.0	31.0	30.7	34.2	29.6	31.7	36.1	32.0	39.1
September	35.0	27.7	33.5	26.9	36.3	33.5	34.0	32.6	29.6	32.5	31.5	32.5	35.2	31.7	33.4
October	34.1	27.8	33.3	27.1	31.1	30.5	30.0	31.3	29.1	30.0	27.8	28.0	35.4	30.4	29.3
November	32.0	29.9	31.5	27.5	32.3	30.5	30.0	32.5	29.8	31 4	29.7	29.0	35.5	31.1	28.9
December	32.5	30.1	31.0	27.5	34.3	29.9	31.0	31.0	29.4	31.8	29.5	28.9	34.9	31.1	28.1
Average	34.2	29.3	33.1	28.0	35.3	32.3	33.2	31.3	29.9	33.0	29.8	29.8	35.6	31.5	33.1
RYE, per bush:															
July	57.5	55.2	50.0	.....	60.0	55.5	.....	50.0	58.8	53.0	.....	.....	70.4	58.8	61.1
August	52.5	54.5	50.0	.....	60.0	55.5	.....	50.0	58.6	51.5	.....	.....	57.0	56.1	60.1
September	52.5	50.3	54.5	.....	60.0	53.5	56.5	50.0	56.0	51.5	.....	.....	58.0	55.2	61.9
October	51.7	50.5	52.1	.....	50.4	52.5	53.3	50.0	56.0	50.0	.....	.....	61.0	55.0	61.3
November	50.0	50.5	50.0	.....	51.8	52.5	55.0	50.0	49.0	50.0	.....	.....	61.2	53.5	57.5
December	50.0	50.5	50.0	.....	52.5	52.5	55.4	50.0	49.0	.....	.....	.....	60.3	53.2	55.9
Average	52.1	51.7	51.1	.....	55.4	53.6	56.1	50.0	54.5	51.5	.....	.....	60.9	55.2	59.7
PEASE, per bush.:															
July	61.0	56.6	67.5	52.5	60.0	60.0	60.0	60.0	59.3	62.5	65.0	57.5	64.0	61.5	74.2
August	59.5	56.8	70.0	52.5	60.0	55.0	61.0	57.5	56.7	62.5	64.4	60.8	64.1	60.5	70.8
September	57.0	54.0	72.5	52.5	60.0	57.5	62.0	54.5	54.5	62.5	55.7	57.5	60.1	57.0	65.6
October	56.5	56.3	67.5	50.6	57.0	57.5	60.7	52.8	53.0	61.3	53.6	57.0	60.1	56.2	63.6
November	55.0	56.0	62.5	50.0	57.5	57.3	59.5	54.0	53.1	59.5	55.5	56.0	60.4	56.4	57.4
December	55.0	55.3	62.5	50.7	58.8	56.5	59.6	56.1	53.0	61.8	55.5	55.4	60.7	56.7	56.5
Average	56.6	55.8	67.1	51.5	58.8	57.5	60.8	55.8	54.9	61.6	58.5	57.1	61.5	58.0	64.4

MARKET PRICES.

TABLE No. XXVI.—Showing the average prices of Agricultural Products at the leading markets of Ontario for July–December in 1885, and the average for the half-year, and for the Province.

—	Belleville.	Brantford.	Brockville.	Chatham.	Cobourg.	Guelph.	Kingston.	Lindsay.	London.	Ottawa.	St. Thomas.	Stratford.	Toronto.	The Province.	
														1885.	1884.
CORN, per bush. in ear:	cts.	cts.	cts.	cts.	cts.	cts.	cts.	cts.	cts.	cts.	cts.	cts.	cts.	cts.	cts.
October		28.5		24.8			36.2		29.4	38.7	25.2			28.1	
November		28.5		24.5			33.6		29.4	35.0	25.0			28.1	
December		28.1		19.0			32.2		28.3	33.3	25.0			27.5	
Average		28.4		23.1			34.2		28.9	35.2	25.1			27.9	
BUCKWHEAT, per bush.:															
October		47.5	43.8				40.0		37.2	40.0				41.1	
November		45.4	37.5				40.0		34.8	40.0				39.1	
December		45.0	37.5				42.5		33.7					37.4	
Average		46.0	39.6				41.0		35.2	40.0				39.2	
BEANS, per bush.:															
October		85.0	125.0	85.6					56.3	112.5				77.9	
November		85.0	112.5	85.1					70.4	100.0				81.4	
December		85.0	112.5	81.0					73.0					80.9	
Average		85.0	116.7	84.2					66.4	109.4				80.0	
POTATOES, per bush.:															
October	35.8	45.9	26.3	34.2	30.0	31.2	48.0	23.2	40.0	25.0	44.3	37.7	36.9	38.3	
November	36.7	48.3	25.0	45.0	36.2	36.7	58.3	30.0	42.2	30.4	51.7	37.9	42.3	41.7	
December	36.7	48.2	25.0	38.3	37.5	36.7	47.9	32.5	45.7	35.3	51.7	43.3	41.7	43.3	
Average	36.4	47.5	25.4	38.7	34.2	35.0	49.8	28.5	42.6	31.1	48.7	39.8	40.3	41.1	
CARROTS, per bush.:															
October			43.4				40.0			29.5				37.4	
November			43.3				33.3			33.5			30.0	31.6	
December			43.3				36.7						30.0	32.2	
Average			43.3				36.0			30.5			30.0	32.5	
TURNIPS, per bush.:															
October			21.6						22.5	25.0			27.7	24.8	
November			21.7				33.3		22.5	26.5			23.5	23.0	
December			21.7				33.3		22.5				23.3	22.8	
Average			21.7				33.3		22.5	25.4			24.9	23.6	
WOOL, per lb:															
July	16.0		17.0	17.0	17.0	19.5	15.5	18.0	17.4	18.0		18.0		17.5	
August	16.0		16.0	17.0	17.0	19.5	16.0	18.0	17.0	18.0		18.0		17.1	
September	16.0		18.0	17.0		19.5	16.0	18.0	17.0	18.0		18.0		17.4	
October	16.0		18.0	17.0		19.5	17.2	18.0	17.0	17.5		18.0		17.4	
November	16.3		18.0	17.0		19.5	17.2	18.0	17.0	18.6				17.4	
December	17.0		18.0	16.0		19.5	17.0	18.0	17.0	19.0				17.5	
Average	16.2		17.5	16.9	17.0	19.5	16.6	18.0	17.0	18.3		18.0		17.4	
HAY, per ton:	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
July	14.50	7.75	11.50	8.50	9.67	8.50	10.00	9.40	7.69	14.86	10.50	9.00	13.22	10.16	*11.95
August	6.75	7.75	9.13	8.50	8.75	7.17	8.50	8.50	7.75	13.07	10.50	8.50	12.27	9.48	10.64
September	6.75	7.75	9.69	8.50	9.25	8.50	8.50	8.00	8.68	13.00		8.50	13.54	9.83	11.79
October	6.56	7.75	9.69	8.50	9.50	8.75	9.00	8.60	8.61	14.50		7.60	13.19	9.56	11.79
November	6.75	7.75	9.75	8.50	9.38	8.81	9.12	9.00	9.00	16.00		8.00	13 78	10.07	11.64
December	9.00	7.75	10.50	9.50	9.25	8.45	9.00	9.00	8.68	14.80		7.40	12.90	9.96	10.77
Average	7.61	7.75	10.07	8.64	9.34	8.42	8 91	8.78	8.41	14.60	10.50	8.08	13.14	9.85	11.44

* Toronto Street Market.

VALUES.

TABLE No. XXVII. Showing by County Municipalities and groups of Counties the values of Wheat, Barley, Oats Rye and Pease, based on the average Market Prices for the Province in the second half of 1885, July—December.

COUNTIES.	Fall Wheat.	Spring Wheat.	Barley.	Oats.	Rye.	Pease.	Totals.	
							1885.	1884.
	$	$	$	$	$	$	$	$
Essex	558,080	32,051	34,585	352,183	16,635	39,325	1,032,259	1,028,986
Kent	1,247,396	70,658	63,570	428,208	9,025	134,355	1,953,212	1,768,126
Elgin	721,819	63,212	57,538	379,991	9,224	163,852	1,395,636	1,338,684
Norfolk	623,395	25,038	67,683	312,618	53,832	186,319	1,268,885	1,277,764
Haldimand	648,028	59,447	192,866	252,702	3,068	140,978	1,297,089	1,218,198
Welland	373,920	39,346	59,503	176,388	11,170	47,883	708,210	787,049
Totals	4,172,638	289,752	475,745	1,902,090	102,354	712,712	7,655.291	7,418,807
Lambton	660,601	182,329	201,579	464,267	2,373	125,847	1,636,996	1,542,686
Huron	1,244,651	275,053	272,996	829,384	1,118	458,709	3,081,911	3,466,664
Bruce	826,431	199,920	226,336	643,231	980	513,174	2,410,072	2,348,938
Totals	2,731,683	657,302	700,911	1,936,882	4,471	1,097,730	7,128,979	7,358,288
Grey	363,193	362,964	290,547	788,073	3,875	554,624	2,363,276	2,918,207
Simcoe	1,123,640	338,592	291,990	610,172	12,884	390,382	2,767,660	3,392,070
Totals	1,486,833	701,556	582,537	1,398,245	16,759	945,006	5,130,936	6,310,277
Middlesex	1,157,323	355,128	139,558	809,841	3,853	267,698	2,733,401	3,033,030
Oxford	663,667	213,254	190,814	603,256	5,837	223,995	1,900,823	2,238,131
Brant	521,364	26,451	255,626	213,456	5,703	118,947	1,141,547	1,326,207
Perth	909,230	153,782	191,821	617,866	1,755	325,940	2,200,394	2,731,148
Wellington	513,847	204,376	422,639	762,566	4,662	519,932	2,428,022	2,856,067
Waterloo	796,014	83,636	204,470	415,802	4,353	211,492	1,715,767	1,820,924
Dufferin	229,889	165,331	151,051	311,373	2,489	144,222	1,004,355	1,076,225
Totals	4,791,334	1,201,958	1,555,979	3,734,160	28,652	1,812,226	13,124,309	15,091,732
Lincoln	442,612	45,907	50,399	207,581	2,227	54,449	803,175	828,433
Wentworth	650,710	51,726	176,703	334,234	2,042	139,960	1,355,375	1,521,001
Halton	491,278	45,576	154,849	217,220	444	145,671	1,055,038	1,137,416
Peel	740,607	148,523	502,354	351,654	5,902	181,177	1,930,217	1,893,903
York	868,333	304,878	781,848	720,090	6,112	351,886	3,033,147	3,591,169
Ontario	202,949	467,293	442,188	517,461	13,244	304,394	1,947,529	2,712,719
Durham	50,261	411,882	586,155	347,595	17,548	235,695	1,649,136	2,191,020
Northumberland	192,321	284,879	575,924	288,341	63,866	198,971	1,604,302	1,927,557
Prince Edward	32,880	91,416	439,469	115,047	65,133	153,547	897,492	943,879
Totals	3,671,951	1,852,080	3,709,889	3,099,223	176,518	1,765,750	14,275,411	16,747,097
Lennox & Addington	31,770	85,923	471,603	233,642	29,275	109,909	962,122	954,573
Frontenac	39,470	132,797	234,753	248,966	23,468	119,541	798,995	836,095
Leeds & Grenville	83,798	226,710	121,542	682,160	35,427	71,855	1,221,492	1,403,385
Dundas	6,853	99,290	91,569	387,284	15,801	20,379	621,176	625,011
Stormont	6,284	75,762	30,819	259,215	2,048	29,508	403,636	468,485
Glengarry	6,743	132,572	19,044	375,037	22	72,268	605,686	543,272
Prescott	763	92,310	23,183	253,790	2,661	94,106	466,813	639,517
Russell	731	62,983	17,236	177,889	1,005	40,964	300,808	452,915
Carleton	8,409	325,258	98,086	623,320	41,595	154,162	1,250,830	1,671,048
Renfrew	3,596	347,671	16,831	404,937	65,081	239,791	1,077,907	1,258,735
Lanark	51,781	210,468	43,704	406,563	30,156	177,309	919,981	869,244
Totals	240,198	1,791,744	1,168,370	4,052,803	246,539	1,129,792	8.629,446	9,722,280
Victoria	150,392	284,605	348,916	363,075	6,855	184,206	1,338,049	1,650,022
Peterborough	146,081	206,522	152,218	304,270	22,083	186,298	1,017,472	1,266,445
Haliburton	311	12,722	4,664	38,248	1,487	15,145	72,577	81,000
Hastings	107,968	250,135	399,502	412,755	90,837	179,828	1,441,025	1,619,020
Totals	404,752	753,984	905,300	1,118,348	121,262	565,477	3,869,123	4,616,487
Muskoka	1,416	18,058	7,412	66,145	2,631	32,471	128,133	155,398
Parry Sound	1,304	26,638	10,226	57,467	2,211	15,563	113,409	117,884
Algoma	2,690	65,612	10,171	32,006	474	46,864	157,817	178,394
Totals	5.410	110,308	27,809	155,618	5,316	94,898	399,359	451,676
The Province 1885	17,504,799	7,358,684	9,126,540	17,397,369	701,871	8,123,591	60,212,854	.....
The Province 1884	16,677,693	11,892,264	10,247,806	19,097,476	984,010	8,817,395	.....	67,716,644

VALUES.

TABLE No. XXVIII.—Showing by County Municipalities and groups of Counties the values of Corn, Buckwheat, Beans, Potatoes, Carrots and Turnips, based on the average Market Prices for the Province in the three months October to December, and of Hay and Clover and Wool based on average Market Prices in the six months July to December, 1885.

COUNTIES.	Corn.	Buck-wheat.	Beans.	Hay and Clover.	Potatoes.	Carrots.	Turnips.	Wool.
	$	$	$	$	$	$	$	$
Essex	642,183	12,141	18,044	680,211	127,680	10,666	25,441	14,887
Kent	491,745	9,226	210,175	920,670	146,680	20,748	43,306	23,481
Elgin	296,084	10,990	21,749	796,363	77,925	14,510	21,137	20,105
Norfolk	232,832	38,920	8,071	553,205	97,674	9,092	54,924	16,361
Haldimand	19,599	3,139	1,128	730,880	93,614	8,151	3,147	20,490
Welland	97,021	15,071	6,927	662,314	89,364	7,751	9,770	15,244
Totals	1,779,464	89,487	266,094	4,343,643	632,937	70,918	157,725	110,568
Lambton	115,306	4,878	7,665	913,489	123,005	15,561	11,319	25,710
Huron	29,074	2,107	2,320	1,429,471	392,706	66,239	662,714	52,489
Bruce	9,171	1,513	1,953	948,673	375,389	30,182	726,223	51,268
Totals	153,551	8,498	11,938	3,291,633	891,100	111,982	1,400,256	129,467
Grey	4,302	2,893	1,620	1,299,028	582,817	72,113	966,842	75,930
Simcoe	8,872	1,795	1,616	829,646	521,926	69,290	332,083	54,582
Totals	13,174	4,688	3,236	2,128,674	1,104,743	141,403	1,298,925	130,512
Middlesex	179,280	3,532	5,241	1,520,791	173,172	42,564	121,515	38,912
Oxford	127,471	5,715	4,120	1,060,333	83,696	29,678	449,673	20,662
Brant	74,155	6,323	3,965	464,309	113,672	33,953	310,105	16,551
Perth	8,964	1,434	496	1,046,789	191,721	62,433	375,699	33,534
Wellington	7,324	293	516	1,307,893	329,466	23,457	1,260,098	53,739
Waterloo	15,341	1,113	464	609,804	186,423	33,118	418,499	24,095
Dufferin	1,309	925	96	460,369	207,200	14,105	182,062	20,981
Totals	413,844	19,335	14,898	6,470,288	1,285,350	239,308	3,117,651	208,474
Lincoln	110,819	4,323	2,704	669,859	63,415	10,651	12,396	10,161
Wentworth	77,379	7,575	1,456	699,399	207,704	31,142	283,863	15,502
Halton	12,712	706	608	547,433	114,340	9,084	157,390	14,335
Peel	5,195	2,311	595	560,012	135,924	19,565	77,564	18,937
York	22,521	627	3,460	1,016,865	241,851	111,625	324,626	34,771
Ontario	21,226	1,646	3,820	762,055	201,699	64,291	1,037,047	31,579
Durham	18,774	7,989	4,930	582,283	154,662	60,697	591,449	23,054
Northumberland	36,162	36,785	5,920	725,847	180,252	22,289	338,350	24,166
Prince Edward	48,125	72,516	4,963	532,983	99,688	1,885	2,549	9,242
Totals	352,913	134,478	28,456	6,096,736	1,399,535	331,229	2,825,734	181,747
Lennox & Addington	28,143	23,048	1,141	668,234	235,742	4,095	12,248	15,275
Frontenac	27,667	14,804	9,273	847,386	120,183	13,979	48,873	18,854
Leeds & Grenville	56,453	57,953	5,351	1,852,795	479,274	9,921	18,101	36,722
Dundas	19,251	21,312	1,920	595,886	225,156	2,275	2,974	11,091
Stormont	18,448	27,471	2,688	493,160	105,31[illegible]	845	5,487	9,633
Glengarry	9,221	7,025	960	443,358	156,08[illegible]	2,015	2,266	14,694
Prescott	18,904	17,464	10,419	293,619	133,741	2,795	13,334	12,036
Russell	4,542	5,419	5,852	179,112	93,096	13,542	19,659	7,714
Carleton	21,563	40,783	10,174	716,597	384,669	54,305	122,654	24,932
Renfrew	5,279	15,021	11,963	385,598	295,163	7,219	47,195	29,390
Lanark	12,845	62,439	3,108	911,450	281,798	15,072	30,877	32,768
Totals	222,316	292,739	62,849	7,387,195	2,510,228	126,063	323,668	213,110
Victoria	6,278	1,447	752	454,075	158,579	34,207	264,911	23,575
Peterborough	7,690	7,344	2,520	426,564	137,145	32,512	85,715	19,458
Haliburton	1,827	1,348	752	93,250	31,693	1,072	20,812	4,056
Hastings	42,714	36,040	4,416	896,705	351,203	24,863	51,367	25,750
Totals	58,509	46,179	8,440	1,870,594	678,620	92,654	422,805	72,839
Muskoka	1,813	1,922	988	218,995	66,056	5,846	74,547	6,469
Parry Sound	469	2,179	272	107,276	49,472	1,853	52,592	2,590
Algoma	795	519	80	118,693	50,419	3,998	34,692	3,339
Totals	3,077	4,620	1,340	444,964	165,947	11,697	161,741	12,398
The Province	2,996,848	600,024	397,251	32,033,727	8,668,460	1,125,254	9,708,505	1,059,115

VALUES.

TABLE No. XXIX.—Showing by County Municipalities and groups of Counties the market values of produce per acre under crop in Ontario in the year 1885.

COUNTIES.	Fall Wheat.	Spring Wheat.	Barley.	Oats.	Rye.	Pease.	Corn.	Buck-wheat.	Beans.	Hay and Clover.	Potatoes.	Carrots.	Turnips.	Average Values.
	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
Essex	19 87	11 84	15 32	12 51	11 73	10 49	20 03	12 74	26 00	17 53	42 22	119 84	86 53	17 92
Kent	20 89	12 54	15 98	13 01	16 56	12 59	18 63	9 31	14 80	16 74	41 87	136 50	118 00	17 73
Elgin	18 51	11 33	16 24	12 05	7 52	12 96	20 65	8 07	18 40	15 86	28 33	103 64	83 55	16 09
Norfolk	19 15	12 29	16 06	11 81	8 39	11 60	19 02	8 36	12 53	13 69	28 08	101 02	90 34	15 11
Haldimand	20 34	10 98	15 89	11 63	8 97	11 37	17 36	5 80	12 00	14 48	49 09	107 25	62 94	15 61
Welland	17 15	9 24	13 90	10 24	10 30	10 03	17 56	9 21	10 64	14 38	33 31	123 03	106 20	14 50
Group	19 59	11 31	15 64	12 03	9 32	11 82	19 41	8 83	15 23	15 46	36 49	116 25	94 79	16 33
Lambton	22 98	11 78	16 83	12 16	9 57	13 10	18 11	9 02	17 03	16 65	38 98	102 37	65 05	16 64
Huron	21 03	6 63	15 56	11 87	8 28	14 82	22 79	8 33	20 00	15 37	72 99	163 15	95 84	17 35
Bruce	18 26	9 07	15 48	11 64	13 80	14 29	18 83	6 66	17 60	11 92	75 76	151 67	128 54	17 03
Group	20 51	8 32	15 88	11 86	9 85	14 36	18 88	8 32	17 63	14 47	66 05	147 93	109 92	17 08
Grey	15 94	7 03	13 44	10 34	12 42	12 85	16 74	7 84	12 00	11 13	78 38	142 80	107 63	15 12
Simcoe	20 58	7 63	14 63	10 44	11 04	12 32	13 95	7 84	16 00	11 23	75 49	120 71	104 72	15 33
Group	19 21	7 31	14 01	10 39	11 33	12 63	14 72	7 84	13 71	11 17	76 99	131 05	106 87	15 22
Middlesex	19 16	10 03	15 26	11 89	11 04	12 39	19 56	8 23	15 60	16 55	29 59	92 93	76 96	15 68
Oxford	19 92	9 39	16 74	12 13	8 28	14 08	18 13	7 84	20 00	16 55	24 98	103 41	87 96	17 07
Brant	17 22	7 69	17 74	11 48	7 87	12 61	19 18	8 72	20 20	14 78	47 72	164 82	124 49	18 16
Perth	22 41	5 55	15 87	12 39	11 04	15 12	19 53	9 02	16 00	15 46	48 29	138 12	74 93	16 92
Wellington	19 35	6 50	15 52	11 71	8 28	13 98	19 53	8 62	12 00	16 15	53 54	114 43	94 79	18 52
Waterloo	20 46	7 00	17 55	12 34	9 57	14 84	15 00	7 84	16 00	14 48	61 47	130 90	81 42	18 33
Dufferin	17 76	7 42	15 77	11 93	5 52	12 68	19 53	7 84	16 00	13 49	58 85	113 75	72 77	15 18
Group	19 72	7 76	16 29	12 00	8 34	13 80	18 83	8 28	15 26	15 69	45 48	120 56	88 74	17 11
Lincoln	21 07	10 11	15 67	11 81	10 17	10 99	19 06	8 53	16 00	16 45	36 55	109 81	71 64	16 66
Wentworth	20 72	10 83	17 69	12 67	9 54	13 37	20 09	9 80	16 00	15 46	61 83	141 56	133 02	19 18
Halton	21 34	7 90	17 26	12 40	9 66	12 59	15 81	4 70	16 00	15 96	66 79	105 62	97 94	17 97
Peel	25 02	10 27	18 49	12 58	9 66	12 61	19 53	8 82	19 20	14 68	46 68	75 83	66 87	17 37
York	21 94	9 43	17 02	12 02	8 83	12 42	22 32	7 84	20 00	13 49	29 39	174 69	107 89	16 10
Ontario	20 46	8 72	15 14	11 03	8 48	12 56	11 16	7 84	20 00	14 58	52 84	136 50	88 13	17 11
Durham	19 04	8 44	15 49	10 88	6 97	11 98	11 90	7 84	15 60	13 40	51 14	131 95	110 45	15 45
Northumberland	19 83	7 83	15 02	9 74	7 97	10 34	10 32	8 16	16 26	13 30	44 28	103 19	103 25	13 93
Prince Edward	17 28	7 79	12 05	8 52	9 06	14 40	9 35	11 20	18 80	16 15	46 24	65 00	70 80	12 92
Group	21 76	8 72	15 64	11 42	8 38	12 30	14 78	9 62	17 38	14 62	45 12	133 78	99 06	16 18
Lennox & Add	13 85	9 79	13 15	10 11	7 68	11 24	15 35	10 65	12 54	14 87	63 87	73 12	70 80	14 17
Frontenac	17 22	12 09	14 43	10 08	9 75	10 71	15 35	11 11	25 36	13 59	30 71	125 94	92 04	13 61
Leeds & Grenville	16 53	15 82	14 90	10 99	9 03	11 73	12 95	10 29	13 86	17 04	65 12	89 37	116 03	16 35
Dundas	9 54	16 84	15 95	13 20	10 76	10 52	13 95	13 33	16 00	16 84	87 34	81 25	70 80	17 28
Stormont	12 77	16 72	15 46	10 47	5 52	10 83	16 74	11 76	32 00	15 76	51 37	65 00	59 00	14 72
Glengarry	16 06	15 15	13 80	12 21	11 04	10 32	13 95	11 37	20 00	13 49	56 51	65 00	70 80	14 38
Prescott	14 67	11 58	11 45	9 41	11 04	8 04	13 72	8 62	17 60	9 85	52 55	65 00	118 00	11 20
Russell	9 37	14 84	13 25	9 31	11 04	10 25	11 16	7 06	22 00	9 26	54 25	108 33	82 60	12 04
Carleton	11 71	14 15	17 03	10 91	9 30	11 68	18 83	10 39	21 60	12 31	61 14	117 54	83 78	14 76
Renfrew	13 37	13 25	14 66	10 22	10 68	10 82	11 16	10 31	30 13	6 57	75 32	73 67	69 81	11 44
Lanark	17 48	12 72	17 11	10 78	11 41	14 87	11 16	10 14	16 80	14 87	72 09	142 19	98 33	15 17
Group	15 63	13 65	14 22	10 80	9 66	11 11	14 16	10 45	20 91	13 61	61 62	106 47	84 46	14 31
Victoria	19 51	7 83	14 03	9 60	8 93	11 34	13 95	3 92	16 00	11 52	52 06	124 39	72 12	13 21
Peterborough	16 15	6 56	13 16	9 94	8 93	11 31	14 65	8 72	8 00	10 34	52 79	95 62	77 29	11 55
Haliburton	9 13	9 81	13 80	8 92	7 95	9 47	13 95	3 92	16 00	9 85	48 91	89 37	49 96	11 88
Hastings	14 78	11 18	14 25	10 18	8 00	11 10	10 23	10 08	24 00	13 59	63 52	146 25	87 66	13 83
Group	16 80	8 24	13 97	9 87	8 21	11 20	11 08	9 00	14 23	11 98	57 41	116 25	73 21	12 94
Muskoka	17 93	10 94	11 32	8 32	8 63	11 31	9 30	7 45	26 00	10 64	47 56	76 92	65 22	13 40
Parry Sound	16 30	14 77	13 11	10 92	9 83	11 54	16 74	8 82	16 00	10 54	78 78	97 50	69 82	15 32
Algoma	16 30	12 09	15 18	9 03	9 11	14 50	13 95	9 80	16 00	11 91	71 92	97 50	59 00	14 98
Group	16 70	12 42	13 21	9 29	9 13	12 73	10 99	8 28	22 33	10 93	61 05	86 01	65 14	14 36
The Province	20 00	9 20	15 27	11 27	8 96	12 57	17 86	9 71	16 12	14 12	54 27	124 70	94 90	15 78

VALUES.

TABLE No. XXX.—Showing by County Municipalities and groups of Counties the average yearly values of the principal farm crops in Ontario for the four years 1882-5, based on the average market prices for the Province in the second half of each year.

COUNTIES.	Fall Wheat.	Spring Wheat.	Barley.	Oats.	Rye.	Pease.	Totals.
	$	$	$	$	$	$	$
Essex	603,565	27,191	31,770	356,802	10,404	42,501	1,072,233
Kent	1,146,174	35,476	90,938	460,725	7,038	82,645	1,822,996
Elgin	863,956	28,361	72,278	443,257	13,052	109,004	1,529,908
Norfolk	602,101	13,594	99,320	347,877	69,837	157,089	1,289,818
Haldimand	539,377	41,830	200,399	266,765	14,290	135,271	1,197,932
Welland	344,319	28,198	61,451	218,670	7,890	38,459	698,987
Totals	4,099,492	174,650	556,156	2,094,096	122,511	564,969	7,611,874
Lambton	623,063	108,775	218,764	490,939	2,581	79,440	1,523,562
Huron	1,443,506	324,885	434,565	959,354	3,075	401,780	3,567,165
Bruce	1,054,325	202,157	289,295	675,337	4,239	528,966	2,754,319
Totals	3,120,894	635,817	942,624	2,125,630	9,895	1,010,186	7,845,046
Grey	643,739	740,570	368,620	940,718	7,467	630,190	3,331,304
Simcoe	1,253,717	533,625	421,000	703,241	33,792	440,058	3,385,433
Totals	1,897,456	1,274,195	789,620	1,643,959	41,259	1,070,248	6,716,737
Middlesex	1,549,345	209,609	241,742	961,730	5,305	197,801	3,165,532
Oxford	760,566	199,451	309,350	716,869	11,517	174,160	2,171,913
Brant	620,526	22,368	250,909	260,145	8,392	108,628	1,270,968
Perth	962,722	262,273	331,202	755,904	2,511	295,747	2,610,359
Wellington	612,465	376,503	549,347	833,199	11,005	522,538	2,905,057
Waterloo	868,167	109,537	277,140	471,761	7,335	193,740	1,927,680
Dufferin	255,897	293,772	148,000	310,162	11,249	143,801	1,162,881
Totals	5,629,688	1,473,513	2,107,690	4,309,770	57,314	1,636,415	15,214,390
Lincoln	418,739	39,409	71,496	235,733	6,525	50,624	822,526
Wentworth	655,256	44,940	198,632	412,204	13,301	123,153	1,447,486
Halton	464,728	57,328	203,462	247,407	7,055	149,833	1,129,813
Peel	647,182	244,432	527,377	379,734	27,583	170,646	1,996,154
York	949,572	484,426	870,153	867,604	25,102	364,706	3,561,563
Ontario	295,109	821,707	568,448	602,302	45,446	331,775	2,664,787
Durham	70,358	757,399	676,363	441,479	61,240	292,692	2,299,531
Northumberland	207,056	475,361	626,829	327,343	119,722	234,969	1,991,280
Prince Edward	41,366	104,065	514,587	134,903	89,981	83,203	968,105
Totals	3,749,366	3,029,067	4,257,347	3,648,709	395,955	1,801,601	16,882,045
Lennox and Addington	40,249	110,410	592,253	237,970	64,803	111,726	1,157,411
Frontenac	48,363	141,543	308,345	301,647	59,692	152,220	1,011,810
Leeds and Grenville	123,490	526,514	176,606	742,953	121,870	87,517	1,478,950
Dundas	35,206	78,400	150,749	376,569	30,820	28,170	699,914
Stormont	18,800	71,961	45,884	316,314	9,615	41,503	504,077
Glengarry	16,091	115,340	28,142	382,607	1,054	82,917	626,151
Prescott	1,452	108,971	25,483	261,982	4,347	113,495	515,730
Russell	5,718	69,404	17,799	207,228	4,960	64,858	369,967
Carleton	36,879	370,357	112,631	764,303	100,398	196,130	1,580,698
Renfrew	29,766	425,615	16,924	463,631	104,566	285,696	1,326,198
Lanark	77,887	225,073	38,747	426,246	92,984	180,162	1,041,099
Totals	433,901	1,943,588	1,513,563	4,481,450	595,109	1,344,394	10,312,005
Victoria	185,991	562,574	397,406	419,975	15,300	210,522	1,791,768
Peterborough	210,184	359,998	202,485	336,954	40,192	199,126	1,348,939
Haliburton	1,231	14,711	4,232	43,547	3,728	19,354	86,803
Hastings	159,313	300,669	618,133	454,726	185,785	202,386	1,921,012
Totals	556,719	1,237,952	1,222,256	1,255,202	245,005	631,388	5,148,522
Muskoka	901	25,388	6,623	84,212	6,367	34,715	158,206
Parry Sound	915	32,598	9,396	51,355	7,198	18,402	119,864
Algoma	8,181	149,180	8,571	42,754	1,215	53,645	263,546
Totals	9,997	207,166	24,590	178,321	14,780	106,762	541,616
The Province	19,497,513	9,975,948	11,413,846	19,737,137	1,481,828	8,165,963	70,272,235

VALUES.

TABLE No. XXXI.—Showing by County Municipalities and groups of Counties the average values per acre of Wheat, Barley, Oats, Rye and Pease, in the four years, 1882-5, based on the average Market Prices for the Province in the second half of each year; also, average values per acre of the six crops for the four years 1882-5, and for 1885.

COUNTIES.	Average Values for the Four Years, 1882-5, of—						Average Values of the six Crops for—	
	Fall Wheat.	Spring Wheat.	Barley.	Oats.	Rye.	Pease.	1882-5.	1885.
	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
Essex	18 23	14 13	15 32	13 71	12 39	12 95	15 94	15 57
Kent	18 67	13 81	15 64	14 97	14 51	13 38	17 01	17 21
Elgin	18 80	13 53	16 02	14 27	10 61	12 61	16 36	14 92
Norfolk	18 19	13 73	16 47	13 38	9 56	13 98	15 24	14 46
Haldimand	16 43	13 42	13 07	12 84	10 94	12 25	14 19	15 47
Welland	14 81	12 73	14 05	11 95	10 46	11 06	13 35	13 26
Group	17 95	13 53	14 58	13 69	10 28	12 88	15 55	15 36
Lambton	18 20	13 86	14 52	13 64	9 81	12 70	15 29	15 71
Huron	19 74	12 55	16 64	14 05	10 22	14 74	16 14	14 06
Bruce	19 23	12 81	16 16	13 02	10 36	15 61	15 77	13 92
Group	19 24	12 84	15 95	13 61	10 17	14 99	15 84	14 36
Grey	20 29	13 78	15 30	12 65	10 82	14 77	14 66	10 96
Simcoe	21 38	14 32	15 88	12 92	12 45	15 04	16 21	13 17
Group	21 00	14 00	15 61	12 76	12 12	14 88	15 40	12 05
Middlesex	19 47	13 81	15 41	14 33	10 96	12 27	16 43	14 02
Oxford	18 70	15 37	18 16	15 00	8 89	14 72	16 50	14 21
Brant	18 90	12 46	17 08	14 80	9 16	13 76	16 79	14 84
Perth	20 41	13 86	17 22	15 27	9 96	14 82	16 84	14 47
Wellington	19 66	13 83	16 65	13 98	11 36	15 11	15 57	12 91
Waterloo	20 96	13 94	18 44	14 85	11 11	15 74	17 68	15 47
Dufferin	19 27	13 23	14 76	12 64	10 94	13 19	14 19	12 14
Group	19 68	13 88	16 90	14 53	10 23	14 40	16 31	13 97
Lincoln	18 47	13 76	15 79	13 51	9 84	12 81	15 78	15 59
Wentworth	19 89	14 19	17 70	15 07	11 47	14 01	17 10	16 28
Halton	19 10	14 19	17 29	14 30	11 06	15 58	16 69	15 77
Peel	22 24	16 42	17 43	14 32	13 07	14 41	17 51	16 91
York	21 52	16 59	17 19	15 39	9 97	14 78	17 16	14 67
Ontario	21 47	16 18	16 60	13 84	11 56	14 21	15 72	11 77
Durham	20 31	16 28	16 67	14 06	9 93	13 82	15 40	11 50
Northumberland	20 76	14 02	14 71	12 27	8 93	12 20	13 65	11 35
Prince Edward	14 32	12 52	12 24	10 39	8 77	13 10	11 69	11 02
Group	20 46	15 64	15 89	14 10	9 69	13 96	15 73	13 54
Lennox & Addington	16 96	14 55	13 61	11 80	9 53	13 33	13 03	11 50
Frontenac	18 17	15 24	15 00	12 11	10 84	13 17	13 58	11 78
Leeds & Grenville	17 61	16 25	15 11	12 53	11 54	13 48	13 57	12 25
Dundas	17 64	17 63	18 32	13 95	15 61	15 01	15 38	13 77
Stormont	17 30	17 59	16 90	13 15	13 28	14 23	14 16	11 58
Glengarry	15 73	15 16	13 77	13 13	11 33	12 00	13 37	12 55
Prescott	11 43	13 90	13 13	10 77	11 26	9 65	11 12	9 53
Russell	17 07	15 64	14 54	12 28	12 53	13 68	13 21	10 44
Carleton	14 25	15 74	16 92	14 41	11 29	14 57	14 61	12 00
Renfrew	17 63	16 73	16 23	13 04	12 87	14 06	14 39	11 28
Lanark	18 91	15 59	17 00	13 45	12 66	16 38	14 69	12 37
Group	17 35	15 85	14 86	12 95	11 72	13 52	13 83	11 80
Victoria	18 68	14 64	15 06	12 46	10 42	13 83	14 32	10 81
Peterborough	19 97	13 10	15 56	12 67	10 39	13 80	14 06	10 01
Haliburton	14 65	10 69	14 59	9 94	11 40	12 92	10 91	9 38
Hastings	18 02	15 72	14 61	11 66	10 08	13 00	13 29	11 46
Group	18 93	14 33	14 91	12 11	10 17	13 15	13 78	10 78
Muskoka	16 69	14 79	12 66	11 44	13 07	13 55	12 46	9 48
Parry Sound	16 94	16 12	13 90	11 72	13 37	13 83	13 32	11 94
Algoma	22 41	19 94	15 33	13 27	11 36	17 80	17 87	12 06
Group	21 14	18 46	13 98	11 92	13 06	15 45	14 86	11 06
The Province	19 37	14 81	15 72	13 54	10 68	14 08	15 33	13 26

VALUES.

TABLE No. XXXII.—Showing by County Municipalities and groups of Counties the value of Farm Property in Ontario in the year 1885.

COUNTIES.	Farm Lands.	Buildings.	Implements.	Live Stock.	Total. 1885.	Total. 1884.
	$	$	$	$	$	$
Essex	14,672,393	3,624,666	1,035,294	2,033,792	21,366,145	22,028,291
Kent	23,885,851	5,497,543	1,529,537	2,956,426	33,869,357	33,640,339
Elgin	18,656,202	4,826,997	1,243,060	2,519,724	27,245,983	27,209,976
Norfolk	11,873,686	3,968,167	993,884	1,864,197	18,699,934	19,123,814
Haldimand	9,400,729	3,247,765	919,194	1,828,265	15,395,953	15,377,607
Welland	8,734,633	3,230,273	763,471	1,358,243	14,086,620	14,525,746
Totals	87,223,494	24,395,411	6,484,440	12,560,647	130,663,992	131,905,773
Lambton	19,379,491	4,132,852	1,145,100	2,559,432	27,216,875	29,033,944
Huron	32,229,201	8,298,076	2,229,290	5,462,992	48,219,559	47,129,811
Bruce	21,739,941	5,631,601	1,604,651	3,833,571	32,809,764	32,679,285
Totals	73,348,633	18,062,529	4,979,041	11,855,995	108,246,198	108,843,040
Grey	23,238,823	6,884,299	1,950,355	4,832,130	36,905,607	35,915,065
Simcoe	25,629,104	6,770,027	1,932,961	3,978,208	38,310,300	38,197,075
Totals	48,867,927	13,654,326	3,883,316	8,810,338	75,215,907	74,112,140
Middlesex	37,871,309	9,761,498	2,459,660	5,797,541	55,890,008	56,169,995
Oxford	24,581,262	6,978,391	1,653,124	3,681,717	36,894,494	36,230,318
Brant	10,731,407	3,546,474	849,332	1,692,372	16,819,585	16,738,569
Perth	22,564,292	6,330,286	1,721,698	3,762,301	34,378,577	34,662,445
Wellington	22,122,629	6,979,567	1,824,922	4,135,775	35,062,893	35,896,325
Waterloo	14,690,897	4,920,807	1,173,786	2,169,524	22,955,014	23,488,474
Dufferin	8,347,180	2,073,776	691,049	1,502,720	12,614,725	13,821,484
Totals	140,908,976	40,590,799	10,373,571	22,741,950	214,615,296	217,007,610
Lincoln	8,771,414	3,244,443	806,600	1,369,559	14,192,016	13,902,637
Wentworth	13,295,322	4,726,450	1,169,018	1,997,193	21,187,983	20,792,011
Halton	9,186,394	3,338,872	816,949	1,623,644	14,965,859	14,757,311
Peel	12,806,809	4,292,384	1,042,429	2,092,655	20,234,277	19,772,390
York	30,093,101	8,612,751	1,977,276	4,040,028	44,723,156	42,650,368
Ontario	20,913,402	5,841,178	1,476,943	3,465,631	31,697,154	31,421,933
Durham	16,547,459	4,723,438	1,200,795	2,383,812	24,855,504	24,187,624
Northumberland	16,007,905	5,153,651	1,309,600	2,370,721	24,841,877	24,368,071
Prince Edward	9,525,072	3,390,062	855,832	1,221,646	14,992,612	15,088,321
Totals	137,146,878	43,323,229	10,655,442	20,564,889	211,690,438	206,940,666
Lennox & Addington	10,163,763	3,110,069	822,750	1,368,843	15,465,425	15,002,565
Frontenac	9,038,356	2,772,123	818,798	1,360,267	13,989,544	12,691,867
Leeds & Grenville	16,542,491	5,751,511	1,419,175	2,931,422	26,644,599	26,739,088
Dundas	8,077,431	2,433,584	654,019	1,189,984	12,355,018	12,021,373
Stormont	5,736,642	1,918,686	543,448	1,030,578	9,229,354	9,007,956
Glengarry	6,399,695	2,137,276	680,425	1,270,744	10,488,140	10,729,814
Prescott	5,939,092	1,818,087	517,219	1,092,018	9,366,416	8,797,289
Russell	4,814,438	1,143,842	373,197	756,384	7,087,861	6,474,719
Carleton	14,510,731	4,082,643	1,269,057	2,220,077	22,082,508	*21,952,844
Renfrew	5,701,860	2,191,451	780,366	1,673,986	10,347,663	9,947,741
Lanark	7,321,155	2,793,234	815,763	1,774,901	12,705,053	12,719,266
Totals	94,245,654	30,152,506	8,694,217	16,669,204	149,761,581	146,084,522
Victoria	12,582,876	3,142,450	883,137	2,034,532	18,642,995	17,523,647
Peterborough	10,840,223	3,007,509	748,699	1,720,370	16,316,801	15,356,122
Haliburton	775,852	203,150	64,605	212,295	1,255,902	1,214,614
Hastings	16,224,037	4,858,251	1,453,091	2,513,997	25,049,376	23,443,442
Totals	40,422,988	11,211,360	3,149,532	6,481,194	61,265,074	57,537,825
Muskoka	2,032,024	578,862	168,758	481,932	3,261,576	3,415,914
Parry Sound	940,309	219,265	77,177	244,790	1,481,541	1,799,919
Algoma	1,285,141	289,618	104,231	279,147	1,958,137	2,155,761
Totals	4,257,474	1,087,745	350,166	1,005,869	6,701,254	7,371,594
The Province.. 1885..	626,422,024	182,477,905	48,569,725	100,690,086	958,159,740	.....
The Province.. 1884..	625,478,707	173,386,925	47,830,710	103,106,829	.....	949,803,170

*An error occurred in the values of this county in 1884, through the omission of one township. The correct figures are given in the totals of this table.

VALUES.

TABLE No. XXXIII.—Showing by County Municipalities and groups of Counties the value of Farm Property per acre in Ontario in the year 1885; also the average Rent per acre of leased farms in 1885, and the four years 1882-5.

COUNTIES.	Farm Lands.	Buildings.	Implements.	Live Stock.	Total.		Leased Farms, Rent per Acre.	
					1885.	1884.	1885.	1882-5.
	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
Essex	34 32	8 47	2 42	4 76	49 98	51 81	2 92	2 85
Kent	42 18	9 71	2 70	5 22	59 81	59 54	3 45	3 58
Elgin	42 37	13 96	2 82	5 72	61 87	61 91	2 96	3 16
Norfolk	29 92	10 00	2 51	4 70	47 13	48 38	2 61	2 69
Haldimand	33 69	11 63	3 29	6 55	55 17	54 81	2 38	2 41
Welland	38 81	14 35	3 39	6 03	62 58	63 82	2 76	2 65
Group	37 35	10 45	2 78	5 38	55 96	56 53	2 90	2 92
Lambton	29 29	6 25	1 73	3 87	41 14	45 30	2 66	2 77
Huron	40 37	10 39	2 79	6 84	60 39	59 14	2 89	2 88
Bruce	26 32	6 82	1 94	4 64	39 72	39 75	2 41	2 45
Group	32 09	7 90	2 18	5 19	47 36	48 16	2 68	2 73
Grey	21 61	6 40	1 81	4 50	34 32	33 40	2 01	2 06
Simcoe	26 66	7 04	2 01	4 14	39 85	39 81	2 79	2 73
Group	24 00	6 70	1 91	4 32	36 93	36 42	2 32	2 33
Middlesex	49 97	12 88	3 25	7 65	73 75	74 13	3 13	3 25
Oxford	52 12	14 79	3 50	7 81	78 22	76 84	3 26	3 13
Brant	49 72	16 43	3 94	7 84	77 93	77 52	3 26	3 31
Perth	43 48	12 20	3 32	7 25	66 25	66 99	2 86	2 92
Wellington	35 29	11 13	2 91	6 60	55 93	57 35	2 50	2 58
Waterloo	47 99	16 07	3 83	7 09	74 98	76 61	3 05	2 98
Dufferin	23 34	5 80	1 93	4 20	35 27	38 90	2 27	2 25
Group	43 29	12 47	3 19	6 99	65 94	66 77	2 92	2 93
Lincoln	45 95	16 99	4 23	7 17	74 34	73 07	3 29	3 06
Wentworth	48 47	17 23	4 26	7 28	77 24	75 59	3 48	3 37
Halton	40 88	14 86	3 64	7 22	66 60	65 81	3 01	2 86
Peel	44 47	14 90	3 62	7 27	70 26	68 65	3 27	3 29
York	55 57	15 94	3 65	7 46	82 59	79 07	3 69	3 69
Ontario	42 14	11 77	2 98	6 98	63 87	63 07	3 51	3 33
Durham	45 15	12 89	3 28	6 50	67 82	65 75	3 42	3 68
Northumberland	36 89	11 87	3 02	5 46	57 24	55 95	2 84	3 02
Prince Edward	41 06	14 61	3 69	5 26	64 62	65 52	2 99	3 11
Group	44 99	14 21	3 50	6 75	69 45	67 87	3 35	3 35
Lennox and Addington	25 15	7 70	2 04	3 39	38 28	37 59	2 62	2 43
Frontenac	13 53	4 15	1 22	2 04	20 94	19 51	2 18	1 95
Leeds and Grenville	22 12	7 69	1 90	3 92	35 63	35 63	2 07	1 94
Dundas	34 05	10 26	2 76	5 01	52 08	50 65	2 56	2 66
Stormont	22 92	7 67	2 17	4 12	36 88	36 11	2 26	2 13
Glengarry	22 28	7 44	2 37	4 43	36 52	36 77	2 03	2 22
Prescott	20 74	6 35	1 81	3 81	32 71	30 79	2 40	2 28
Russell	19 17	4 55	1 49	3 01	28 22	25 88	2 08	2 14
Carleton	25 28	7 11	2 21	3 87	38 47	39 35	2 82	2 74
Renfrew	6 65	2 56	91	1 95	12 07	12 29	1 95	1 68
Lanark	11 03	4 21	1 23	2 68	19 15	19 10	1 41	1 45
Group	18 04	5 77	1 66	3 19	28 66	28 38	2 25	2 12
Victoria	22 27	5 56	1 56	3 60	32 99	31 17	2 74	2 84
Peterborough	20 56	5 70	1 42	3 26	30 94	29 15	2 13	2 17
Haliburton	1 44	38	12	39	2 33	2 27	1 28	1 24
Hastings	17 49	5 24	1 57	2 71	27 01	25 85	2 37	2 28
Group	15 80	4 38	1 23	2 54	23 95	22 74	2 37	2 43
Muskoka	3 99	1 14	33	94	6 40	6 85	1 98	1 61
Parry Sound	3 78	88	31	99	5 96	7 61	2 04	1 54
Algoma	4 72	1 06	38	1 03	7 19	5 79	2 04	1 96
Group	4 13	1 06	34	97	6 50	6 66	2 01	1 77
The Province (1885)	28 77	8 38	2 23	4 62	44 00	.....	2 80	2 77
The Province (1884)	28.81	7.99	2.20	4.75	.....	43 75	2.75	.....

FARM WAGES.

TABLE No. XXXIV.—Showing by County Municipalities and groups of Counties the average Wages of Farm Hands and Domestic Servants in Ontario in 1885, and for the four years 1882-5.

COUNTIES.	Farm hands.								Domestics.	
	Per year.				Per month.				Per week, with board.	
	With board.		Without board.		With board.		Without board.			
	1885.	1882-5.	1885.	1882-5.	1885.	1882-5.	1885.	1882-5.	1885.	1882-5.
Essex	$153	$163	$242	$253	$16 85	$18 06	$26 03	$27 33	1 51	1 60
Kent	165	179	261	273	17 53	18 95	26 53	27 63	1 49	1 54
Elgin	167	173	253	253	17 74	18 78	26 19	27 90	1 53	1 57
Norfolk	150	159	227	240	15 47	16 89	24 61	24 79	1 29	1 40
Haldimand	152	158	241	242	16 82	17 98	26 61	27 33	1 39	1 45
Welland	147	149	247	244	16 51	17 08	26 64	27 52	1 41	1 39
Group	157	165	246	252	16 96	18 20	26 07	27 08	1 44	1 50
Lambton	164	175	271	274	17 71	18 86	28 02	28 66	1 49	1 56
Huron	162	168	262	260	17 59	18 77	27 85	28 34	1 48	1 49
Bruce	163	165	257	256	17 76	18 83	28 05	27 97	1 42	1 45
Group	163	169	263	263	17 68	18 82	27 95	28 38	1 46	1 49
Grey	154	161	252	244	17 09	18 31	27 29	27 48	1 42	1 39
Simcoe	165	167	263	265	18 02	19 24	28 43	29 23	1 56	1 52
Group	159	164	257	256	17 52	18 87	27 82	28 46	1 48	1 44
Middlesex	159	172	255	252	17 41	19 52	27 94	28 17	1 56	1 57
Oxford	164	168	258	254	17 13	17 54	27 58	26 22	1 55	1 59
Brant	155	165	239	245	16 36	17 96	25 49	26 34	1 54	1 56
Perth	162	168	255	260	18 24	19 57	28 55	29 77	1 53	1 56
Wellington	160	167	258	260	17 29	18 22	27 48	28 02	1 51	1 54
Waterloo	152	157	254	249	16 85	17 95	28 07	26 57	1 46	1 48
Dufferin	154	158	256	253	17 33	18 31	27 92	28 77	1 48	1 44
Group	159	166	254	253	17 31	18 46	27 71	27 44	1 52	1 54
Lincoln	155	160	247	246	17 14	18 06	26 93	26 39	1 44	1 45
Wentworth	156	158	248	254	17 20	18 06	27 04	27 44	1 54	1 52
Halton	170	173	264	267	18 13	18 95	27 74	28 68	1 66	1 67
Peel	165	170	269	267	18 20	19 10	27 86	29 03	1 75	1 76
York	167	172	265	264	17 77	18 58	27 83	28 54	1 58	1 58
Ontario	165	171	263	269	16 98	18 86	27 82	29 08	1 52	1 49
Durham	163	167	254	250	16 80	17 66	27 03	26 56	1 64	1 56
Northumberland	154	158	242	249	16 87	17 42	26 75	26 30	1 57	1 53
Prince Edward	152	154	239	227	16 76	17 11	24 80	24 40	1 47	1 41
Group	162	166	255	255	17 38	18 28	27 19	27 38	1 57	1 55
Lennox and Addington	151	158	232	238	16 15	17 37	24 11	26 59	1 47	1 56
Frontenac	147	154	244	247	16 82	18 45	26 35	27 22	1 57	1 45
Leeds and Grenville	159	168	250	255	17 22	19 04	27 24	27 44	1 55	1 51
Dundas	150	159	233	233	17 16	17 76	26 73	28 41	1 74	1 69
Stormont	155	175	244	246	17 97	19 44	27 56	28 93	1 50	1 50
Glengarry	148	173	252	254	16 81	19 52	25 94	28 72	1 46	1 59
Prescott	170	171	263	270	18 37	20 25	27 58	29 36	1 39	1 43
Russell	164	177	244	260	17 60	19 93	27 27	28 12	1 42	1 36
Carleton	167	166	267	255	17 20	17 98	27 07	28 18	1 68	1 62
Renfrew	155	174	240	272	16 74	19 12	26 79	28 56	1 32	1 40
Lanark	168	179	257	271	17 16	19 40	26 37	27 98	1 63	1 67
Group	158	167	248	254	17 16	19 00	26 67	27 60	1 52	1 52
Victoria	158	170	233	257	16 86	18 86	25 81	28 41	1 53	1 58
Peterborough	166	174	255	265	17 36	19 52	27 61	28 21	1 59	1 58
Haliburton	163	170	256	268	17 58	19 30	27 45	29 79	1 43	1 34
Hastings	155	164	249	254	16 53	18 15	25 46	26 28	1 40	1 45
Group	160	169	246	259	16 93	18 90	26 39	27 87	1 50	1 52
Muskoka	159	176	268	285	19 14	20 33	28 53	30 44	1 54	1 47
Parry Sound	157	180	265	281	17 74	20 36	28 25	31 04	1 49	1 42
Algoma	167	184	266	286	18 08	22 11	29 07	32 24	1 40	1 53
Group	161	181	267	286	18 55	20 77	28 65	31 10	1 49	1 49
The Province	160	167	253	256	17 32	18 53	27 18	27 88	1 51	1 52

LABOR AND WAGES.

TABLE No. XXXV.—Showing by industries the total wages paid to male and female employes for the two weeks ending April 25 and October 31, 1885, as given by 496 employers of labor in Almonte, Belleville, Brantford, Brockville, Carleton Place, Chatham, Cornwall, Galt, Gananoque, Guelph, Hamilton, Hespeler, Kingston, London, Merritton, Oshawa, Ottawa, Paris, Peterborough, St. Catharines, St. Thomas, Stratford, Thorold, Toronto, Walkerville and Windsor.

INDUSTRIES.	Week ending April 25.						Week ending October 31.					
	No. of Returns.	Sex.		Number.		Amount of wages or earnings.	No. of Returns.	Sex.		Number.		Amount of wages or earnings.
		Male.	Female	Over 16.	Under 16.			Male.	Female	Over 16.	Under 16.	
						$ c.						$ c.
Agricultural hand implement works	3	178	.....	160	18	1,681 92	3	137	.....	122	15	1,239 87
Agricultural implement works	19	1,325	.....	1.284	41	11,592 48	19	1,098	.....	1,073	25	9,273 73
Axle factories	2	39	.....	38	1	391 70	2	34	.....	33	1	358 00
Barbers	4	8	.....	8	.....	75 50	4	8	.....	8	.....	75 50
Biscuit and confection'ry	5	157	104	250	11	1,479 16	5	165	157	304	18	1,666 75
Blacksmiths (general)	2	6	.....	6	.....	47 00	2	6	.....	6	.....	47 00
Boiler and engine works	12	904	.....	865	39	8.783 79	12	867	.....	834	33	8,594 24
Bookbinderies	5	121	83	175	29	1,214 28	5	137	106	188	55	1,361 75
Boot and shoe factories	11	271	157	407	21	3,056 74	11	293	153	424	22	3,256 21
Brass foundries	2	11	.....	11	.....	88 00	2	10	.....	9	1	82 50
Breweries & distilleries	9	470	5	456	19	3,860 53	9	497	5	478	24	4,371 74
Bridge builders	2	99	.....	96	3	861 87	2	98	.....	95	3	834 15
Builders	6	277	.....	268	9	3,349 55	6	369	.....	361	8	4,081 30
Butchers	2	5	.....	5	.....	48 50	2	5	.....	5	.....	48 50
Carpet factories	2	67	27	92	2	871 00	2	61	25	84	2	760 00
Carriage works	25	484	.....	480	4	3,847 71	24	377	.....	376	1	3.035 85
Carriage furnishings	3	145	.....	135	10	1,235 58	3	139	.....	129	10	1,213 26
Cigar & tobacco factories	13	409	135	337	207	3,120 20	13	398	122	322	198	2,982 36
Clothing factories	19	172	226	385	13	2,643 00	19	179	209	378	10	2,629 55
Coal and wood yards	4	43	.....	40	3	290 05	4	52	.....	50	2	365 00
Coffin factories	2	102	5	85	22	840 27	2	110	5	96	19	1,000 98
Cotton factories	6	574	747	1,146	175	7,570 65	6	634	804	1,260	178	8,239 85
Cotton batting factories	2	8	7	12	3	75 30	2	8	7	12	3	74 70
Fanning mill factories	2	20	.....	20	.....	188 50	2	28	.....	28	.....	249 50
Flouring mills	27	489	.....	487	2	4,358 91	27	473	.....	469	4	4,275 01
Foundries (general)	23	586	.....	576	10	5,069 83	23	624	.....	613	11	5,329 13
Furniture factories	19	371	5	342	34	3,000 02	19	390	5	362	33	3,092 78
Gas works	2	48	.....	48	.....	434 09	2	48	.....	48	.....	453 71
Glass factories	4	332	2	236	98	3,768 97	4	362	2	268	96	4,211 20
Glove factories	4	49	85	125	9	846 80	4	48	81	120	9	847 90
Harness makers	18	94	.....	93	1	804 90	18	92	.....	91	1	772 50
Hat factories	3	64	33	97	.....	893 15	3	72	36	107	1	955 13
Hotels	12	57	107	158	6	528 98	12	57	107	158	6	527 88
Hub spoke and bending factories	2	64	.....	57	7	468 90	2	64	.....	58	6	467 90
Knitting factories	9	204	354	458	100	2,948 67	8	185	293	428	50	2,593 05
Lumber mills	9	936	.....	852	84	6,885 37	9	1,305	.....	1,211	94	9,816 67
Malleable iron works	2	207	.....	202	5	2,033 52	2	208	.....	203	5	2,044 25
Marble works	13	97	.....	96	1	959 76	13	90	.....	88	2	858 64
Millinery	14	84	201	279	6	1,996 97	14	84	199	273	10	1,984 42
Miscellaneous	26	615	265	788	92	6,269 12	26	590	227	730	87	5 770 47
Nail and rivet works	2	61	7	53	15	464 90	2	61	7	53	15	465 20
Newspaper publishers	30	1,013	44	738	319	6,864 88	30	1,016	42	759	299	6,846 70
Painters	2	45	.....	45	.....	476 10	2	33	.....	33	.....	362 52
Paper mills	3	163	97	253	7	1,923 13	3	164	99	256	7	1,938 83
Piano & organ factories	5	114	.....	111	3	1.167 20	5	112	.....	110	2	1,092 95

TABLE No. XXXV.—LABOR AND WAGES.—*Continued.*

INDUSTRIES.	Week ending April 25.						Week ending October 31.					
	No. of Returns.	Sex.		Number.		Amount of wages or earnings.	No. of Returns.	Sex.		Number.		Amount of wages or earnings.
		Male.	Female	Over 16.	Under 16.			Male.	Female	Over 16.	Under 16.	
						$ c.						$ c.
Planing mills	21	422	1	410	13	3,862 52	21	446	1	427	20	4,009 20
Plaster mills	2	38	.....	38	.....	312 00	2	41	.....	41	.....	336 50
Plumbers, gasfitters, etc.	7	91	.....	68	23	726 00	7	114	.....	88	26	826 00
Pork packers	2	93	.....	86	7	722 75	2	118	.....	108	10	877 65
Potteries	2	21	.....	21	.....	182 00	2	22	.....	22	.....	188 00
Railways	3	929	5	927	7	8,792 43	3	893	5	888	10	8,944 18
Saw factories	2	68	.....	52	16	521 28	2	72	.....	56	16	663 57
Sewing machine fact'ries	3	346	.....	323	23	3,474 64	2	163	.....	156	7	2,050 78
Ship builders	4	248	.....	248	.....	2,093 00	4	174	.....	174	.....	1,439 00
Soap factories	2	18	.....	18	.....	152 00	2	18	.....	18	.....	152 00
Stove foundries	9	518	.....	512	6	4,910 38	10	638	.....	630	8	6,290 32
Street railways	2	37	.....	37	.....	295 10	2	37	.....	37	.....	295 10
Tanneries	9	146	.....	146	.....	1,207 50	9	146	.....	146	.....	1,192 50
Tin shops	7	50	1	50	1	427 75	7	52	1	52	1	435 25
Watchmakers&jewellers	10	68	3	68	3	597 50	10	62	2	60	4	552 00
Whip factories	2	6	9	14	1	88 50	2	6	9	14	1	79 25
Wire Works	2	31	6	27	10	228 00	2	34	.....	22	12	212 50
Woollen factories	16	430	398	644	184	4,559 70	16	416	386	626	176	4,438 68
Totals (1885.	496	15,148	3,119	16,544	1,723	142,529 60	494	15,240	3,095	16,678	1,657	143,531 61
Totals (1884.	416	16,803	2,799	17,666	1,936	154,867 43	416	16,384	3,027	17,435	1,976	151,603 79

NOTE.—In the return for lumber mills the bushmen are not given; only those employed in the mills, lumber yards, etc. In hotel returns board is included. Under the head of miscellaneous is included all industries for which only one return has been received.

LABOR AND WAGES.

TABLE No. XXXVI.—Showing by occupations the average hours employed and wages earned for the weeks ending April 25 and October 31, 1885, in Almonte, Belleville, Brantford, Brockville, Carleton Place, Chatham, Cornwall, Galt, Gananoque, Guelph, Hamilton, Hespeler, Kingston, London, Merritton, Oshawa, Ottawa, Paris, Peterborough, St. Catharines, St. Thomas, Stratford, Thorold, Toronto, Walkerville and Windsor, based on returns of 17,602 workpeople collected from employers, and of 2,759 collected from employes.

OCCUPATION OR SUB-OCCUPATION.	Unit of workpeople—		Week ending April 25.		Week ending October 31.		Average per week for the two weeks of—	
	Over 16	Under 16	Hours employed.	Earnings.	Hours employed.	Earnings.	Hours employed.	Earnings.
Agricultural Hand Implement worker:				$ c.		$ c.		$ c.
Blacksmith	M.		59.00	9 00	56.50	8 50	57.75	8 75
Carpenter and turner	"		58.20	10 14	53.70	9 10	55.95	9 62
Grinder	"		59.50	13 80	58.25	11 56	58.88	12 68
Machinist	"		59.11	11 06	56.89	10 36	58.00	10 71
Polisher	"		59.54	12 19	58.09	10 82	58.88	11 56
Various	"		58.84	10 20	55.94	9 47	57.51	9 87
Agricultural Implement worker:								
Blacksmith	"		59.57	9 52	59.33	9 03	59.46	9 29
Core maker	"		57.00	6 00	56.00	6 50	56.60	6 20
Machinist	"		59.58	9 62	59.39	9 14	59.50	9 40
Melter	"		57.80	8 40	57.00	8 22	57.40	8 31
Moulder	"		59.52	11 73	59.21	11 56	59.36	11 64
Painter	"		59.73	9 01	59.28	8 47	59.54	8 79
Woodworker	"		59.67	9 33	59.32	9 02	59.51	9 19
Apprentice (various)	"		59.25	3 80	58.74	3 89	59.00	3 84
"		M.	58.30	2 97	59.38	2 90	58.34	2 93
Axe factory worker:								
Axe maker	M.		57.73	11 96	52.51	10 88	55.44	11 48
Grinder	"		58.00	8 41	53.00	7 70	56.00	8 13
Polisher	"		58.00	12 20	53.00	10 95	55.78	11 64
Temperer	"		58.20	10 39	54.50	9 94	56.56	10 19
Axle factory worker:								
Blacksmith	"		60.00	12 25	60.00	12 25	60.00	12 25
Machinist	"		60.00	10 77	60.00	11 68	60.00	11 18
Various	"		58.33	10 08	54.38	8 69	56.07	9 29
Baker	"		59.60	9 19	59.84	9 27	59.72	9 23
Barber	"		71.11	9 14	71.17	9 17	71.14	9 15
Biscuit and confectionery worker:								
Baker	"		58.41	7 75	58.48	7 52	58.44	7 63
Confectioner	"		59.54	7 13	59.48	7 39	59.51	7 26
"		M.	55.71	3 29	54·92	2 83	55.20	2 99
"	F.		58.69	2 74	58.85	2 61	58.79	2 66
Packer	"		51.32	2 71	51.84	2 70	51.59	2 71
Blacksmith (general)	M.		60.30	9 06	60.05	8 96	60.18	9 01
" (helper)	"		59.09	6 48	58.60	6 46	58.86	6 47
Boiler and Engine worker:								
Blacksmith	"		58.88	11 21	59.30	11 36	59.09	11 28
Boilermaker	"		58.81	10 88	56.55	11 07	57.78	10 96
" (helper)	"		59.25	7 32	59.58	7 41	59.41	7 36
Machinist	"		58.97	10 75	59.37	10 97	59.17	10 86
Moulder	"		58.91	12 05	59.00	12 53	58.95	12 27
Pattern maker	"		59.20	9 90	56.42	9 69	57.82	9 80
Various	"		59.00	8 40	59.00	8 40	59.00	8 40
Bookbinder	"		57.90	9 77	55.70	9 75	56.80	9 76
"	F.		60.00	3 07	60.00	3 08	60.00	3 08
Book-keeper	M.		58.05	12 79	57.95	12 77	58.00	12 78
"	F.		53.80	5 60	53.80	5 60	53.80	5 60
Boot and shoe operative:								
Bottomer	M.		59.18	9 21	59.13	9 83	59.15	9 54
Cutter	"		57.10	8 25	56.76	8 00	56.92	8 12
Finisher	"		56.84	10 19	56.56	10 57	56.69	10 39
Fitter	F.		58.43	3 62	58.43	4 43	58.43	4 03
Laster	M.		56.78	8 75	56.44	9 04	56.60	8 90
Machine operator	"		57.28	10 91	57.03	10 91	57.15	10 91
"	F.		55.60	4 73	55.23	4 59	55.42	4 66
Pasters	"		51.37	3 97	51.00	3 99	51.18	3 98
Sole Cutter	M.		57.89	7 86	57.97	8 07	57.93	7 78
Various	"		58.89	8 45	58.79	8 90	58.84	8 64
"		M.	54.80	3 38	53.43	3 03	54.00	3 18

NOTE.—In the first and second columns the letters M. and F. denote the sex of workpeople.

TABLE No. XXXVI.—LABOR AND WAGES.—*Continued.*

OCCUPATION OR SUB-OCCUPATION.	Unit of workpeople—		Week ending April 25.		Week ending October 31.		Average per week for the two weeks of—	
	Over 16	Under 16	Hours employed.	Earnings.	Hours employed.	Earnings.	Hours employed.	Earnings.
				$ c.		$ c.		$ c.
Box and bag (paper) factory worker:								
Bag maker	F.		56.48	3 76	56.43	3 86	56.45	3 81
"		F.	56.67	2 42	57.14	2 36	56.92	2 38
Box maker	F.		56.71	3 75	56.55	3 77	56.63	3 76
Machine tender	"		57.00	3 45	57.00	3 45	57.00	3 45
Brass finisher	M.		58.40	8 88	58.59	8 60	58.50	8 73
Brass moulder	"		56.00	10 00	60.00	12 00	57.60	10 80
Brewery and distillery operative:								
Bottler	"		57.40	7 34	54.72	6 81	55.94	7 05
"		M.	56.70	3 10	57.29	2 99	56.96	3 04
Brewer	M.		61.24	12 48	60.99	11 97	61.10	12 21
Cellarman	"		59.96	8 08	60.13	8 08	60.04	8 08
Distiller	"		62.67	12 02	59.67	11 58	61.17	11 80
Malster	"		70.77	8 65	70.03	8 57	70.40	8 61
Peddler	"		60.61	8 20	60.12	8 02	60.35	8 11
Various	"		68.04	8 23	66.80	8 42	67.53	8 31
Bricklayer	"		57.10	14 80	57.15	14 81	57.13	14 81
Bridge builder:								
Blacksmith	"		55.83	10 77	56.67	10 43	56.25	10 60
Machinist	"		56.79	9 77	56.56	9 10	56.67	9 41
Pattern maker	"		56.25	13 31	57.50	12 88	56.67	13 17
Riveter	"		55.00	8 80	56.36	8 58	55.65	8 70
Various	"		58.75	11 64	58.64	10 77	58.68	11 14
Brush maker	"		57.69	9 90	55.79	9 63	56.70	9 76
Butcher	"		62.38	8 92	63.62	9 00	63.00	8 96
Carpenter (general)	"		58.39	10 43	58.55	10 56	58.48	10 50
Carriage factory worker:								
Blacksmith	"		59.25	10 01	59.29	10 00	59.27	10 01
Painter	"		59.44	9 66	59.00	9 96	59.25	9 79
Trimmer	"		59.12	11 10	58.62	11 03	58.88	11 07
Woodworker	"		59.64	9 74	59.25	9 65	59.46	9 70
Carpet weaver	"		67.36	10 73	59.38	10 09	63.56	10 42
"	F.		60.00	5 04	60.00	5 12	60.00	5 08
Cigar factory operative:								
Bunch breaker	M.		57.00	7 57	57.44	8 09	57.20	7 80
"	F.		56.90	3 66	57.60	4 01	57.22	3 82
Cigar maker	M.		52.10	8 76	52.08	8 94	52.09	8 85
"	F.		57.92	3 27	57.36	3 70	57.63	3 49
"		M.	54.95	3 52	54.96	3 46	54.95	3 49
Packer	M.		49.33	10 40	47.33	11 47	48.33	10 93
"	F.		53.29	4 00	63.38	3 88	53.33	3 93
Stripper	"		51.00	2 97	51.61	2 82	51.30	2 90
"		M.	55.36	2 39	54.27	2 11	54.83	2 25
Clerk (office)	M.		56.83	11 61	57.11	11 80	56.98	11 71
"	F.		59.00	4 00	59.00	4 00	59 00	4 00
Coal heaver	M.		50.00	7 00	57.67	7 67	55.00	7 50
Collar maker	"		66.00	12 60	60.00	10 50	63.33	11 67
Cooper	"		59.82	9 33	59.99	9 48	59.91	9 42
Corset maker	F.		56.00	4 50	56.00	4 50	56.00	4 50
Cotton batting mill operative:								
Batting roller	"		60.00	3 72	60.00	3 72	60.00	3 72
Carder	M.		60.00	8 70	60.00	8 70	60.00	8 70
Lap Carrier		M.	60.00	3 55	60.00	3 55	60.00	3 55
Lap feeder	M.		60.00	6 75	60.00	6 75	60.00	6 75
Packer	"		60.00	6 00	60.00	6 00	60.00	6 00
Cotton mill operative:								
Beamer	F.		60.00	3 87	60.00	3 87	60.00	3 87
Carder	M.		57.68	6 44	58.75	6 30	58.22	6 37
"	F.		59.45	4 36	59.48	4 34	59.46	4 35
Card grinder	M.		62.10	8 85	62.10	8 89	62.10	8 87
Card stripper	"		61.71	4 78	62.12	5 51	61.59	5 09
Card tender	"		62.40	4 50	62.67	4 58	62.53	4 53
Doffer		M.	60.00	1 80	60.00	1 81	60.00	1 80
Drawing frame tender	F.		59.56	3 97	59.52	4 12	59.52	4 04

TABLE No. XXXVI.—LABOR AND WAGES.—*Continued.*

OCCUPATION OR SUB-OCCUPATION.	Unit of workpeople—		Week ending April 25.		Week ending October 31.		Average per week for the two weeks of—	
	Over 16.	Under 16.	Hours employed.	Earnings.	Hours employed.	Earnings.	Hours employed.	Earnings.
				$ c.		$ c.		$ c.
Cotton mill operative—*Continued.*								
Dresser	M.		62.50	10 65	62.50	11 07	62.50	10 86
Dyer	"		60.55	6 96	63.66	7 28	61.61	7 12
Finisher	"		63.73	6 87	64.13	7 00	63.93	6 93
"	F.		61.29	4 81	61.81	4 58	61.57	4 69
Intermediate tender	"		60.33	4 26	60.33	4 89	60.33	4 58
Loom fixer	M.		62.14	8 45	61.03	8 57	61.50	8 52
Mule spinner	"		61.06	6 79	61.06	6 69	61.06	6 74
Picker tender	"		61.58	5 88	62.50	6 02	62.03	5 95
Reeler	F.		60.08	3 71	60.08	3 36	60.08	3 52
Roving hand	"		56.74	4 09	56.78	3 96	56.76	4 02
Section hand	M.		60.08	8 60	60.37	9 29	60.20	8 90
Slasher	"		62.57	10 67	62.57	10 67	62.57	10 67
Slubber	F.		57.65	3 84	57.64	4 94	57.65	4 34
Speeder	"		60.87	4 10	60.90	5 44	60.89	4 74
Spinner	M.		57.12	7 13	54.94	6 19	56.01	6 65
"	F.		60.55	4 40	59.91	4 36	60.23	4 38
"		F.	53.60	2 30	49.76	2 18	51.68	2 24
Spooler	F.		60.90	3 19	60.80	3 30	60.84	3 25
Twister	"		60.00	3 53	53.33	2 97	56.67	3 25
"		M.	60.17	2 85	60.14	2 96	60.16	2 90
Warper	F.		60.42	4 55	60.44	4 58	60.43	4 56
Waste picker	"		60.25	3 54	60.30	3 20	60.28	3 35
Weaver	M.		60.56	8 28	60.36	9 17	60.46	8 73
"	F.		60.21	5 97	60.30	5 86	60.26	5 91
Web drawer	"		62.95	4 20	61.76	4 16	61.90	4 18
Winder	"		60.23	3 62	60.21	2 87	60.22	3 18
Various	M.		61.67	8 14	61.33	8 24	61.50	8 19
"		M.	61.22	3 02	60.90	3 30	61.07	3 15
"	F.		61.31	4 84	60.54	4 63	60.92	4 73
"		F.	59.72	3 08	59.19	3 09	59.45	3 08
Dressmaker	F.		56.26	4 43	56.26	4 60	56.26	4 51
Engineer	M.		61.46	9 43	61.94	9 43	61.71	9 43
Engraver	"		57.25	10 12	57.25	10 19	57.25	10 16
Fanning mill maker	"		59.88	8 97	59.96	8 52	59.92	8 70
File maker	"		63.00	7 00	57.00	9 00	59.00	8 33
Fireman	"		62.60	8 39	61.32	8 39	61.93	8 39
Florist	F.		54.00	2 38	54.00	2 38	54.00	2 38
Flour packer	M.		60.46	7 63	60.47	7 67	60.47	7 65
Foreman:								
Baker	"		60.00	9 50	60.00	9 50	60.00	9 50
Blacksmith	"		60.00	12 00	60.00	12 00	60.00	12 00
Cabinet-maker	"		60.00	12 25	60.00	12 25	60.00	12 25
Carpenter	"		57.75	13 11	57.75	13 11	57.75	13 11
Cotton mill	"		61.00	16 80	61.24	15 82	61.12	16 30
Knitting mill	"		62.89	14 73	62.89	14 73	62.89	14 73
Lumber mill	"		62.73	19 27	65.00	18 66	64.04	18 92
Machinist	"		59.67	14 00	59.67	14 00	59.67	14 00
Miller	"		60.00	12 25	60.00	12 25	60.00	12 25
Moulder	"		58.14	13 93	58.71	14 21	58.43	14 07
Paper mill	"		60.00	12 62	60.00	12 62	60.00	12 62
Printer	"		57.83	12 17	59.09	12 45	58.43	12 30
Railway	"		64.37	11 70	64.37	11 49	64.37	11 60
Shoemaker	"		60.00	10 50	60.00	10 50	60.00	10 50
Woollen mill	"		60.98	14 02	60.91	14 08	60.94	14 05
Various	"		58.28	15 75	58.45	16 20	58.36	15 98
Forewoman	F.		57.60	8 30	58.00	7 67	57.82	7 95
Foundry (general):								
Blacksmith	M.		59.64	9 64	57.29	9 22	58.43	9 42
Machinist	"		59.44	10 40	57.67	10 26	58.58	10 34
Moulder	"		59.14	10 52	58.40	10 46	58.76	10 49
Painter	"		59.78	11 31	59.87	10 54	59.83	10 83
Pattern maker	"		59.86	12 03	59.00	12 16	59.41	12 10
Woodworker	"		59.96	9 50	59.47	8 76	59.65	9 03

TABLE No. XXXVI.—LABOR AND WAGES.—*Continued.*

OCCUPATION OR SUB-OCCUPATION.	Unit of workpeople—		Week ending April 25.		Week ending October 31.		Average per week for the two weeks of—	
	Over 16.	Under 16.	Hours employed.	Earnings.	Hours employed.	Earnings.	Hours employed.	Earnings.
				$ c.		$ c.		$ c.
Furniture factory employe:								
Cabinet maker	M.		59.44	9 25	59.48	9 25	59.46	9 25
Carver	"		58.90	12 28	58.28	11 40	58.55	11 80
Chairmaker	"		59.29	8 36	54.62	8 00	56.80	8 17
Finisher	"		58.78	8 34	59.18	8 69	59.04	8 52
Machine hand	"		59.08	9 26	59.37	9 32	59.22	9 29
Mattress maker	F.		60.00	4 71	60.00	4 71	60.00	4 71
Ornamenter	M.		59.00	11 50	53.00	10 50	56.00	11 00
Sawyer	"		58.00	9 30	58.00	9 30	58.00	9 30
Turner	"		58.62	9 85	59.80	10 45	59.13	10 11
Upholsterer	"		58.12	10 20	57.53	10 15	57.81	10 18
Varnisher and polisher	"		55.60	8 37	53.60	8 17	54.60	8 27
Various	"		59.33	11 17	59.33	11 17	59.33	11 17
Furrier	F.		50.60	3 95	50.60	3 95	50.60	3 95
Gas and steam fitter	M.		61.13	10 34	61.09	10 56	61.11	10 46
Gas works employe (general)	"		57.45	7 89	60.64	8 24	59.04	8 06
Glass factory worker:								
Blower	"		49.73	22 30	49.71	22 39	49.72	22 35
Packer	"		56.92	7 62	60.00	7 55	58.57	7 58
Pot maker	"		57.60	13 10	57.60	13 10	57.60	13 10
Various	"		56.84	7 45	56.30	7 34	56.55	7.39
"		M.	50.96	3 53	51.02	3 52	50.99	3 53
Glove factory employe:								
Maker	F.		56.63	3 73	62.64	3 97	59.59	3 85
Various	M.		58.79	9 53	58.79	9 71	58.79	9 62
Gunsmith	"		55.00	15 00	55.00	15 00	55.00	15 00
Hame maker	"		58.00	7 25	59.00	7 17	58.50	7 21
Harness maker	"		59.53	8 68	59.27	8 66	59.40	8 67
Hat factory employe:								
Binder	F.		59.11	4 67	58.74	4 68	58.92	4 68
Blocker	M.		58.67	8 67	58.67	8 67	58.67	8 67
Curler	"		60.00	15 00	60.00	15 43	60.00	15 21
Finisher	"		60.00	9 42	60.00	10 08	60.00	9 75
Hatmaker	"		58.12	9 93	55.05	8 85	56.38	9 32
Various	"		58.67	10 33	58.86	9 43	58.78	9 85
"	F.		56.80	4 63	56.24	4 25	56.50	4 43
Horse shoer	M.		59.75	8 81	54.75	8 06	57.25	8 44
Hotel employe (with board):								
Bartender	"		74.05	6 65	73.23	6 58	73.64	6 61
Bell boy		M.	73.20	2 00	73.20	2 00	73.20	2 00
Chambermaid	F.		73.00	2 12	72.50	2 12	72.75	2 12
Clerk	M.		73.71	7 21	73.71	7 21	73.71	7 21
Cook	F.		71.33	5 29	70.83	5 29	71.08	5 29
Kitchen girl	"		74.57	2 03	74.57	2 03	74.57	2 03
Laundress	"		73.38	2 24	73.38	2 23	73.38	2 23
Porter	M.		72.62	3 66	72.62	3 66	72.62	3 66
Stableman	"		74.57	3 04	72 86	3 18	73.71	3 11
Waiter	F.		74.43	2 15	73.86	2 15	74.14	2 15
Knitting mill employe:								
Carder	M.		62.80	10 80	59.80	10 42	61.30	10 61
Darner	F.		60.00	4 25	60.00	4 37	60.00	4 31
Dyer	M.		63.33	8 00	63.33	8 00	63.33	8 00
Finisher	F.		62.15	4 36	62.28	4 35	62.21	4 35
"		F.	63.40	2 78	63.56	2 81	63.48	2 79
Knitter	M.		59.71	7 97	55.50	7 38	57.54	7 67
"		M.	60.00	2 75	56.00	2 56	58.00	2 65
"	F.		62.05	3 68	62.15	3 70	62.10	3 69
Mender	"		62.46	3 79	61.77	3 69	62.13	3 74
Mule piecer	M.		60.67	4 67	60.00	4 62	60 33	4 64
Picker	"		63.00	6 94	61.00	6 75	62.00	6 84
"		F.	61.00	2 77	57.00	2 55	59.00	2 66
Scourer	M.		62.00	7 15	60.36	7 01	61.22	7 08
Spinner	"		62.90	6 22	62.00	6 21	62.46	6 21

TABLE No. XXXVI.—LABOR AND WAGES.—*Continued.*

OCCUPATION OR SUB-OCCUPATION.	Unit of workpeople—		Week ending April 25.		Week ending October 31.		Average per week for the two weeks of—	
	Over 16.	Under 16.	Hours employed.	Earnings.	Hours employed.	Earnings.	Hours employed.	Earnings.
				$ c.		$ c.		$ c.
Knitting mill employe.—*Con.*								
Spooler	F.		63.30	3 41	63.09	2 91	63.20	3 17
Winder	"		62.67	3 08	63.11	3 06	62.86	3 07
Various	M.		62.60	8 37	61.46	8 31	62.05	8 34
"		M.	62.83	3 89	61.56	3 84	62.21	3 87
"	F.		63.22	3 72	56.18	3 19	59.84	3 46
"		F.	60.67	2 17	55.33	1 96	58.00	2 06
Laborer (general)	M.		60.23	7 20	60.81	7 05	60.54	7 12
Lamplighter	"		57.45	7 89	60.64	8 24	59.04	8 06
Lather	"		60.00	13 50	59.75	9 75	59.80	10 50
Limeburner	"		58.00	7 83	70.50	9 25	65.14	8 66
Lock factory employe:								
Fitter	"				60.83	13 50	60.83	13 50
Locksmith	"		57.67	9 33	57.67	9 33	57.67	9 33
Machinist	"				50.00	16 50	50.00	16 50
Moulder	"				61.20	15 30	61.20	15 30
Polisher	"				60.00	12 00	60.00	12 00
Various	"				56.00	15 00	56.00	15 00
Lumber mill employe:								
Culler	"		64.75	8 93	66.26	8 85	65.74	8 88
Edger	"		66.00	9 50	67.50	9 00	67.00	9 15
Filer	"		64.53	11 83	66.24	11 39	65.67	11 54
Jointer	"		61.33	8 50	61.33	8 50	61.33	8 50
Measurer	"		65.40	8 00	67.14	7 86	66.42	7 92
Piler	"		60.41	7 22	63.41	7 84	63.01	7 78
Sawyer	"		62.96	9 65	64.10	9 26	63.59	9 45
Slabber	"		62.00	7 67	67.09	8 27	66.00	8 14
Surveyor	"		60.00	9 67	62.00	10 33	61.00	10 00
Various	"		62.93	7 79	68.66	7 12	66.79	7 43
"		M.			67.27	4 40	67.27	4 40
Machine hand (general)	M.		58.07	9 07	59.20	9 15	58.64	9 11
Machinist (general)	"		61.36	10 95	59.82	11 40	60.72	11 14
Marble cutter	"		58.94	9 83	59.38	9 83	59.15	9 83
" polisher	"		59.09	7 40	59.39	7 28	59.24	7 34
Mason (stone)	"		53.69	12 75	56.76	12 58	55.12	12 67
Miller	"		64.07	9 45	64.28	9 81	64.17	9 62
Milliner	F.		57.24	5 16	57.20	5 17	57.22	5 16
Millwright	M.		60.04	10 91	60.81	11 30	60.59	11 09
Miscellaneous	"		57.14	8 36	57.36	8 39	57.25	8 38
"		M.	58.43	2 88	58.37	3 20	58.40	3 04
"	F.		54.95	3 69	54.41	3 94	54.71	3 80
"		F.	54.69	2 67	55.79	2 86	55.16	2 75
Nail maker	M.		60.00	12 00	60.00	12 00	60.00	12.00
Newspaper employe:								
Carrier boy		M.	16.38	1 77	16.40	1 77	16.39	1 77
Compositor	M.		55.99	8 48	55.95	8 51	55.97	8 49
"	F.		58.93	4 60	58.93	4 60	58.93	4 60
Editor	M.		58.32	17 88	57.35	17 54	57.82	17 71
Press feeder	"		57.12	4 52	57.11	5 00	57.12	4 76
Pressman	"		58.82	9 32	58.79	9 48	58.80	9 40
Reporter	"		57.12	12 06	56.88	12 11	57.00	12 08
Office boy		M.	58.29	3 11	58.29	3 11	58.29	3 11
Organ factory employe:								
Action maker	M.		59.29	9 11	57.86	9 29	58.57	9 20
Case maker	"		59.75	11 21	56.83	10 58	58.29	10 89
Finisher	"		59.50	11 00	59.50	11 00	59.50	11 00
Trimmer	"		59.80	9 72	59.80	9 72	59.80	9 72
Tuner	"		59.67	17 00	58.00	17 00	58.83	17 00
Various	"		59.29	9 01	55.86	8 77	57.69	8 90
Packer (general)	"		60.08	6 38	60.05	7 43	60.06	7 02
Painter, house	"		57.49	10 34	54.92	10 11	56.30	10 24
" ornamental	"		58.00	12 95	57.33	12 82	57.67	12 89
" various	"		56.35	10 04	53.81	9 74	55.07	9 89
Paper hanger	"		57.60	10 80	57.00	10 20	57.33	10 48

TABLE No. XXXVI.—LABOR AND WAGES.—*Continued.*

OCCUPATION OR SUB-OCCUPATION.	UNIT OF WORKPEOPLE—		WEEK ENDING APRIL 25.		WEEK ENDING OCTOBER 31.		AVERAGE PER WEEK FOR THE TWO WEEKS OF—	
	Over 16.	Under 16.	Hours employed.	Earnings.	Hours employed.	Earnings.	Hours employed.	Earnings.
				$ c.		$ c.		$ c.
Paper mill operator :								
Bleacher	M.		60.00	7 00	60.00	7 00	60.00	7 00
Finisher	"		60.00	8 26	60.00	8 33	60.00	8 29
"	F.		60.00	3 97	60.00	3 97	60.00	3 97
Machine tender	M.		60.00	10 56	60.00	10 46	60.00	10 51
Rag cutter	"		60.00	8 47	60.00	8 47	60.00	8 47
Rag picker	F.		59.78	4 25	59.79	4 26	59.78	4 26
Various	"		60.00	4 28	60.00	4 25	60.00	4 27
"	M.		60.00	8 27	60.00	8 27	60.00	8 27
Pattern maker (general)	"		61.65	12 71	60.10	12 98	60.81	12 86
Photographer	"		48.00	10 00	48.00	10 00	48.00	10 00
Piano factory employe :								
Action maker	"		59.00	13 75	59.00	11 50	59.00	12 63
Case maker	"		59.00	9 75	59.00	12 06	59.00	10 78
Fly finisher	"		59.00	15 63	59.00	14 83	59.00	15 29
Polisher	"		59.00	8 80	59.00	8 60	59.00	8 70
Various	"		58.82	10 49	58.80	10 00	58.81	10 24
Planer	"		59.60	7 96	57.20	7 96	58.40	7 96
Plasterer	"		58.62	14 03	58.64	14 40	58.63	14 24
Plumber	"		59.06	10 71	59.95	10 91	59.52	10 82
Potter	"		58.63	8 75	58.63	8 75	58.63	8 75
Pump maker	"		58.67	7 92	57.83	7 96	58.25	7 94
Railway shop employe :								
Blacksmith	"		59.33	8 75	59.33	9 62	59.33	9 18
Car builder	"		53.60	8 87	53.60	8 53	53.60	8 70
Car repairer	"		58.47	8 96	58.63	9 84	58.54	9 33
Coppersmith	"		49.00	9 45	55.00	10 21	52.00	9 83
Fitter	"		57.68	9 33	58.97	9 46	58.32	9 40
Helper	"		53.33	5 90	57.33	6 43	55.33	6 16
Machinest	"		50.67	9 00	54.67	9 48	52.67	9 24
Moulder	"		60.00	8 50	60.00	8 70	60.00	8 62
Painter	"		56.40	7 99	57.92	8 92	56.97	8 34
Woodworker	"		59.06	8 10	58.59	9 20	58.89	8 49
Various	"		59.48	7 60	59.68	7 97	59.57	7 77
Railway employe :								
Baggageman	"		72.00	8 83	72.00	8 83	72.00	8 83
Brakesman	"		64.94	8 19	63.52	8 02	64.16	8 10
Checker	"		65.00	6 80	65.00	6 80	65.00	6 80
Cleaner	"		60.70	7 17	60.79	7 27	60.74	7 22
Conductor	"		60 09	12 37	60.69	11 32	60.42	11 80
Despatcher	"		56 00	17 36	56.00	17 36	56.00	17 36
Engineer	"		61 25	18 04	60.51	20 34	60.89	19 18
Fireman	"		60 00	10 01	60.00	10 83	60.00	10 43
Operator and agent	"		60.44	8 67	60.44	8 67	60.44	8 67
Porter	"		60.00	7 84	60.06	8 32	60.06	8 08
Signalman	"		81.25	6 43	81.25	6 43	81.25	6 43
Switchman	"		82.09	9 72	81.87	10 09	81.98	9 91
Yardman	"		67.20	9 41	69.00	9 74	68.00	9 55
Various	"		60.64	8 12	60.44	7 83	60.54	7 97
Rivet maker	"		60.00	9 00	60.00	9 00	60.00	9 00
Saddler	"		52.50	7 50	52.50	7 50	52.50	7 50
Safe maker	"		59.13	10 96	59.33	10 99	59.23	10 98
Salesman	"		60.12	9 73	59.92	9 64	60.02	9 68
Saleswoman	F.		59.42	6 15	59.43	6 13	59.42	6 14
Sash, door and blind maker	M.		60.00	10 50	60.00	10 00	60.00	10 25
Saw factory employe :								
Etcher	"		52.33	5 92	55.50	7 04	53.60	6 37
Filer	"		42.86	6 51	57.40	13 46	51.41	10 60
Grinder	"		50.00	11 24	55.20	12 28	52.60	11 76
Packer	"		60.00	8 25	60.00	9 75	60.00	9 00
Polisher	"		46.67	7 13	60.00	8 50	53.33	7 81
Saw maker	"		48.60	14 37	49.29	12 26	49.00	13 14
Temperer	"		48.60	10 18	57.60	12 52	53.00	11 45
Various	"		47.29	7 10	55.38	8 55	51 21	7 80
Seamstress	F.		51.00	3 50	51.60	3 55	51 30	3 52
Servant (with board)	"		70.33	2 83	70.33	2 83	70 33	2 83

TABLE No. XXXVI.—LABOR AND WAGES.—*Continued.*

OCCUPATION OR SUB-OCCUPATION.	Unit of workpeople—		Week Ending April 25.		Week ending October 31.		Average per week for the two weeks of—	
	Over 16	Under 16	Hours employed.	Earnings.	Hours employed.	Earnings.	Hours employed.	Earnings.
				$ c.		$ c.		$ c.
Servant (with board)	M.		71.00	6 00	71.00	6 00	71.00	6 00
Sewing machine factory employe:								
Fitter	"		58.85	10 47	62.37	10 95	61.46	10 71
Machinest	"		57.59	9 72	61.63	11 10	59.50	10 37
Woodworker	"		57.32	10 96	59.81	10 67	58.61	10 81
Various	"		54.67	8 96	51.97	10 26	53.64	9 46
Ship carpenter	"		60.00	8 92	59.96	8 80	59.98	8 87
Shipper	"		59.76	6 85	62.22	7 22	61.33	7 09
Shirtmaker	F.		51.00	3 94	51.00	4 12	51.00	4 03
Shoemaker	M.		59.33	7 70	59.40	7 97	59.37	7 83
Shovel maker	"		61.29	9 50	53.50	7 78	57.69	8 70
Silver plater	"		58.00	10 15	60.00	10 43	59.00	10 29
Soap maker	"		59.04	7 35	59.04	7 43	59.04	7 39
Spring fitter	"		55.50	13 00	53.75	12 25	54.62	12 62
Spring maker	"		49.50	9 12	50.75	9 37	50.12	9 25
Stereotyper	"		36.00	8 00	36.00	8 00	36.00	8 00
Stone cutter	"		58.86	13 20	57.41	12 90	58.19	13 06
Stove foundry employe:								
Assorter	"		62.53	7 30	60.00	7 03	61.15	7 15
Blacksmith	"		56.80	8 86	62.50	9 79	59.33	9 27
Core maker	"		60.00	4 67	60.00	4 67	60.00	4 67
Finisher	"		60.00	8 14	60.00	8 09	60.00	8 12
Fitter	"		60.00	9 67	60.00	10 00	60.00	9 84
Grinder	"		60.00	8 25	60.00	7 50	60.00	7 82
Japanner	"		61.20	8 10	60.91	9 63	61.04	8 90
Machinist	"		54.41	8 11	58.33	8 44	56.43	8 28
Melter	"		60.00	8 75	59.33	8 94	59.64	8 85
Moulder	"		59.39	12 03	59.58	12 45	59.50	12 27
Mounter	"		53.74	8 79	63.58	10 16	59.31	9 57
Nickle plater	"		58.91	8 16	63.21	9 55	61.32	8 93
Pattern maker	"		59.40	11 24	65.38	12 75	62.78	12 09
Polisher	"		56.65	10 75	64.93	12 20	61.41	11 58
Solderer	F.		60.00	2 25	60.00	2 25	60.00	2 25
Woodworker	M.		60.32	9 97	60.77	9 66	60.56	9 80
Various	"		54.70	7 18	59.11	6 66	57.38	6 86
Street railway employe:								
Driver	"		75.42	7 56	75.42	7 56	75.42	7 56
Stableman	"		69.33	8 17	69.33	8 17	69.33	8 17
Trackman	"		67.00	7 90	67.00	7 90	67.00	7 90
Tailor shop employe:								
Cutter	"		58.65	18 13	58.91	18 17	58.78	18 15
Tailor	"		59.45	10 15	59.63	10 16	59.54	10 15
Tailoress	F.		57.85	4 54	57.84	4 46	57.85	4 50
Tannery employe:								
Beam hand	M		59.62	8 75	59.63	8 65	59.62	8 70
Currier	"		59.51	8 82	58.59	8 73	59.06	8 77
Tanner	"		59.69	7 98	59.69	7 95	59.69	7 97
Yardman	"		59.00	7 50	59.00	7 50	59.00	7 50
Teamster	"		60.81	7 29	60.83	7 34	60.82	7 32
Telegraph operator	"		68.00	9 87	68.00	9 87	68.00	9 87
Telephone employe:								
Lineman	"		60.00	7 00	60.00	7 00	60.00	7 00
Operator	F.		54.00	4 25	54.00	4 25	54.00	4 25
Tinsmith	M.		61.03	9 20	60.17	9 20	60.60	9 20
Tobacco maker	"		50.69	9 21	50.69	9 23	50.69	9 22
Tool maker	"		57.00	8 25	50.80	7 31	53.90	7 78
Traveller	"		59.16	15 79	59.14	15 85	59.15	15 82
Wagon maker	"		60.00	9 67	57.43	9 21	58.62	9 42
Watchmaker and jeweller	"		56.49	9 52	56.18	9 56	56.34	9 54
Watchman	"		67.93	7 59	66.44	7 46	67.17	7 52
Wheel factory employe:								
Bender	"		56.25	7 45	64.00	7 79	60.35	7 63
Morticer	"		60.00	9 24	66.00	10 28	63.00	9 76
Spoke maker	"		60.00	8 58	63.65	9 17	61.79	8 86
Wheel maker	"		60.00	11 88	60.00	11 38	60.00	11 59
Various	M.		60.59	7 78	61.47	7 88	61.03	7 83

TABLE No. XXXVI.—LABOR AND WAGES.—*Continued.*

OCCUPATION OR SUB-OCCUPATION.	Unit of workpeople— Over 16	Under 16	Week ending April 25. Hours employed.	Earnings.	Week ending October 31. Hours employed.	Earnings.	Average per week for the two weeks of— Hours employed.	Earnings.
				$ c.		$ c.		$ c.
Whip maker	"		60.00	8 58	52.00	7 46	56.00	8 02
"	F.		60.00	4 11	56.00	3 83	58.00	3 97
Wincey mill operative (various)	M.		58.00	5 90	45.17	4 42	51.00	5 09
Wire worker	"		60.00	6 19	60.00	7 25	60.00	6 65
Wood turner	"		58.67	9 29	57.60	9 46	58.11	9 38
Woollen mill employe:								
Assorter	"		60.00	7 80	59.67	7 35	59.83	7 57
Burler	F.		60.90	3 96	60.78	3 97	60.84	3 96
Card cleaner	M.		60.00	6 10	60.00	6 11	60.00	6 10
Carder	"		59.80	7 41	59.30	7 46	59.55	7 43
"		M.	60.00	2 91	60.00	2 91	60.00	2 91
Card helper		"	60.00	3 45	60.00	3 43	60.00	3 44
Darner	F.		61.71	4 97	61.71	4 89	61.71	4 93
Drawing framer tender	"		60.60	4 01	60.60	3 99	60.60	4 00
Dresser	"		60.00	4 66	60.00	4 60	60.00	4 63
Dyer	M.		59.98	7 36	59.19	7 03	59.63	7 21
Finisher	"		60.09	7 65	60.07	7 14	60.08	7 37
"		M.	60.00	3 75	60.00	3 90	60.00	3 83
"	F.		60.00	3 38	60.00	3 38	60.00	3 38
Fuller	M.		60.50	7 60	60.50	7 20	60.50	7 40
Loom fixer	"		61.20	9 49	61.50	8 93	61.33	9 24
Picker	"		59.80	6 07	59.82	6 07	59.81	6 07
Picker tender		M.	59.80	2 76	59.83	2 70	59.82	2 73
Piecer		"	60.00	2 95	60.00	2 91	60.00	2 93
Reeler	F.		59.75	4 33	59.75	4 33	59.75	4 33
Scourer	M.		61.06	6 42	61.06	6 42	61.06	6 42
Shears tender	F.		63.00	4 27	63.00	4 27	63.00	4 27
Specker	"		61.29	3 47	60.95	3 58	61.09	3 53
Spinner	M.		60.42	7 89	60.48	7 90	60.45	7 89
"		M.	61.09	2 89	61.03	2 87	61.06	2 88
"	F.		61.80	3 10	61.80	3 10	61.80	3 10
"		F.	63.00	2 60	63.00	2 60	63.00	2 60
Spooler	F.		59.96	3 02	60.17	2 97	60.07	3 00
Twister	"		60.00	4 06	60.00	4 42	60.00	4 25
"		M.	60.00	2 92	60.00	2 92	60.00	2 92
Warper	F.		61.71	4 10	61.71	4 10	61.71	4 10
"	M.		60.62	7 31	60·56	7 33	60.59	7 32
Weaver	"		61.50	7 21	61.80	7 70	61.64	7 43
"	F.		60.36	4 67	60.39	4 61	60.37	4 64
Winder	"		59.98	2 94	59.97	3 11	59.97	3 02
"		F.	60.00	2 10	60.00	2 25	60.00	2 13
Various	M.		60.94	6 41	61.54	6 45	61.29	6 43
"		M.	62.09	2 90	62.18	2 90	62.13	2 90
"	F.		60.42	3 92	60.35	3 94	60.38	3 93
"		F.	60.00	2 90	60.00	2 90	60.00	2 90
Average for all occupations	M.		59.37	9 09	59.50	9 11	59.43	9 10
		M.	47.45	2 82	50.43	2 93	49.95	2 88
	F.		58.66	4 34	58.77	4 36	58.72	4 35
		F.	57.65	2 58	56.31	2 52	57.00	2 55
All classes 1885			58.64	7 89	58.79	7 92	58.71	7 90
All classes 1884			57.12	7 96	55.74	7 85	56.44	7 90

NOTE.—In making the general averages, hotel employes and servants with board are not included. The term "various," under the different occupations, includes such sub-occupations for each of which not more than one return has been received.

LABOR AND WAGES.

TABLE NO. XXXVIII.—Showing by occupations the averages of time employed, wages earned and cost of living in Almonte, Belleville, Brantford, Brockville, Chatham, Cornwall, Galt, Gananoque, Guelph, Hamilton, Hespeler, Kingston, London, Oshawa, Ottawa, Peterborough, Stratford, St. Thomas and Toronto for the year ending October 31, 1885, based on returns collected from 2,637 workpeople.

OCCUPATION OR SUB-OCCUPATION.	Unit of workpeople— Over 16.	Unit of workpeople— Under 16.	No. of dependents.	No. of dependents under 16.	Hours employed per week.	Days employed in year.	Yearly wages from occupation.	Extra earnings.	Wife and minor children's earnings.	Total earnings.	Cost of living.
							$ c.	$ c.	$ c.	$ c.	$ c.
Agricultural implement worker:											
Blacksmith	M.		2.22	1.67	59.67	269.17	449 96	2 78	11 11	463 85	413 07
Core maker	"		2.00	1.00	58.00	192.25	237 12	....	....	237 12	247 37
Machinist	"		2.96	2.01	58.15	253.10	440 12	2 08	9 38	451 58	395 63
Melter	"		2.33	1.00	57.00	211.67	310 83	....	....	310 83	327 50
Moulder	"		3.02	2.07	58.88	233.74	453 10	2 33	5 23	460 66	415 08
Painter	"		2.29	1.86	59.07	261.93	364 82	....	20 71	385 53	367 68
Woodworker	"		2.88	1.98	58.62	244.88	354 11	2 50	11 57	368 18	354 17
Apprentice (various)	"	....	0.01	....	58.39	290.15	167 84	2 89	....	170 73	158 29
" "	....	M.	....	....	57.72	281.50	109 32	0 22	....	109 54	96 94
Axe maker	M.	....	2.67	2.00	57.67	283.33	503 33	....	....	503 33	343 33
Axle maker	"	....	1.33	0.83	55.67	274.67	364 17	8 33	....	372 50	325 67
Baker	"	....	1.50	1.00	59.42	276.50	389 08	2 12	....	391 20	330 77
Barber	"	....	0.50	0.30	70.80	310.90	445 30	....	....	445 30	343 90
Blacksmith (general)	"	....	3.15	2.23	59.59	265.55	394 55	8 18	17 27	420 00	335 66
" (helper)	"	....	1.86	1.29	57.79	276.79	297 40	5 14	....	302 54	274 22
Boiler and engine worker:											
Blacksmith	M.	....	2.60	1.40	58.20	292.80	497 60	....	84 00	581 60	358 00
Boiler maker	"	....	1.56	0.94	57.62	244.81	440 22	....	9 06	449 28	374 31
" (helper)	"	....	2.25	1.25	57.50	223.75	262 03	....	....	262 03	262 03
Machinist	"	....	1.56	1.00	58.44	289.50	484 00	....	19 44	503 44	347 36
Moulder	"	....	3.67	2.83	57.67	276.67	464 17	....	....	464 17	414 50
Pattern maker	"	....	3.00	1.33	56.33	300.00	500 00	....	50 00	550 00	441 67
Various	"	....	1.33	1.00	58.33	295.33	429 00	....	....	429 00	310 67
Bookbinder	"	....	1.50	0.50	54.00	266.67	469 33	....	....	469 33	355 00
Bookkeeper	"	....	3.00	2.17	55.00	297.67	597 67	....	....	597 67	462 67
"	F.	....	....	....	51.00	300.00	300 00	....	....	300 00	225 00
Box and bag (paper) factory operative:											
Bag maker	"	....	0.35	0.27	57.00	300.00	173 50	....	.. ..	173 50	160 08
Band-box maker	"	....	0.50	0.50	57.00	300.00	114 00	....	....	114 00	114 00
Box maker	"	....	0.08	0.08	57.15	295.38	163 00	....	....	163 00	147 30
Machine tender	"	....	....	....	57.00	300.00	148 70	....	....	148 70	145 60
Brewery employe:											
Bottler	M.	....	1.25	0.25	60.00	292.50	284 38	....	....	284 38	219 50
Brewer	"	....	1.25	0.75	62.00	311.25	575 00	....	....	575 00	424 75
Cellarman	"	....	4.50	3.50	65.00	332.50	429 00	....	....	429 00	334 00
Malster	"	....	4.00	2.00	60.00	262.00	420 50	....	....	420 50	405 50
Peddler	"	....	3.50	2.50	60.00	313.00	416 00	....	....	416 00	339 00
Bricklayer	"	....	3.00	2.06	56.89	193.22	446 66	12 22	7 61	466 49	386 10
Brushmaker	"	....	2.55	1.73	55.64	300.18	477 21	6 36	....	483 57	395 25
Butcher	"	....	1.87	1.37	60.88	301.75	438 63	....	....	438 63	327 00
Carpenter (general)	"	....	2.87	1.88	56.87	250.83	444 18	9 18	8 96	462 32	380 01
Carriage worker:											
Blacksmith	"	....	2.17	1.22	59.13	278.65	400 33	5 43	8 70	414 46	361 78
Painter	"	....	1.71	1.07	59.00	259.79	434 02	8 93	....	452 95	356 94
Trimmer	"	....	2.38	1.63	55.63	257.38	447 50	13 75	6 25	467 50	430 75
Woodworker	"	....	2.64	1.71	59.04	271.25	427 23	7 46	30 61	465 30	392 60
Carpet weaver	"	....	2.86	2.29	57.43	207.29	294 71	....	21 43	316 14	303 71
Cigar factory operative:											
Cigarmaker	M.	....	1.07	0.50	55.64	252.29	352 64	11 86	....	364 50	294 71
"	F.	....	0.67	....	56.67	283.33	155 33	....	....	155 33	118 67
Packer	....	F.	....	....	54.00	212.50	87 50	....	....	87 50	73 25
Stripper	....	M.	....	....	60.00	246.67	100 00	....	....	100 00	109 67
Various	F.	....	....	....	48.00	243.00	151 50	....	....	151 50	175 00
Coal heaver	M.	....	4.33	2.67	56.67	168.33	236 67	73 33	23 33	333 33	329 33

NOTE.—In this table the number of dependents is the average for the total number of workpeople, and the worker himself is not included.

TABLE No. XXXVIII.—LABOR AND WAGES—*Continued.*

OCCUPATION OR SUB-OCCUPATION.	Unit of workpeople— Over 16.	Unit of workpeople— Under 16.	No. of dependents.	No. of dependents under 16.	Hours employed per week.	Days employed in year.	Yearly wages from occupation.		Extra earnings.		Wife and minor children's earnings.		Total earnings.		Cost of living.	
							$	c.	$	c.	$	c.	$	c.	$	c.
Confectionary operative:																
Confectioner	M.		1.36	0.79	59.79	272.86	387	69	8	57			396	26	309	00
"	F.		0.50	0.50	60.00	213.33	87	63					87	63	85	17
Packer	F.				60.00	300.00	111	67					111	67	111	67
Cooper	M.		4.33	3.00	59.00	262.92	380	82	8	75	8	33	397	90	400	67
Corset maker	F.				56.00	290.00	225	00					225	00	225	00
Cotton mill operative:																
Carder	M.		2.50	2.00	60.00	306.00	331	00	32	00			363	00	280	50
Speeder	F.				60.00	290.00	206	50					206	50	201	50
Twister		M.			60.00	300.00	134	75					134	75	123	00
Weaver	M.		3.00	2.33	59.67	202.67	259	87			80	47	340	34	325	13
"	F.		0.67		60.33	300.00	325	00					325	00	274	67
Various	"				60.00	258.14	166	51					166	51	175	80
"	M.		2.50	2.00	59.75	224.00	272	35	12	50	69	75	354	60	315	00
"		M.			57.00	166.00	65	50					65	50	99	00
"	F.	F.			60.00	236.00	94	00					94	00	95	33
Distiller	M.		2.33	0.67	59.33	301.33	550	00					550	00	380	00
Dressmaker	F.				55.60	268.75	141	75					141	75	122	25
Engineer, marine	M.		3.75	2.75	66.00	225.25	473	50	12	50			486	00	439	50
" stationary	"		3.31	1.94	62.06	284.20	419	40	2	00	15	86	437	26	383	05
Fanning mill maker	"		0.50		59.00	290.00	472	50					472	50	325	00
File maker	"		3.00	2.50	57.00	226.50	353	00	6	00			359	00	259	00
Fireman (general)	"		2.36	1.91	64.82	281.75	355	64	4	55	19	09	379	28	327	18
Florist	F.				54.00	293.33	104	65					104	65	98	33
Foreman:																
Baker	M.		4.00	2.00	60.00	313.00	482	08					482	08	501	00
Blacksmith	"		3.67	2.00	60.00	294.33	589	33					589	33	461	67
Cabinetmaker	"		1.50	0.50	60.00	300.00	600	00					600	00	383	00
Carpenter	"		3.60	2.00	58.20	292.50	618	66	7	50	12	00	638	16	452	20
Machinist	"		6.00	4.00	60.00	300.00	738	00			106	00	844	00	706	00
Miller	"		3.00	3.00	60.00	300.00	700	90					700	50	450	00
Millwright	"		5.50	4.50	59.50	300.00	712	50					712	50	605	00
Moulder	"		4.00	1.83	57.67	296.50	636	89	3	33	25	00	665	22	450	17
Printer	"		2.67	1.00	57.67	304.00	490	00	16	00			506	00	441	67
Railway (various)	"		3.37	1.50	61.12	310.25	600	57					600	57	458	63
Shoemaker	"		5.00	2.50	60.00	300.00	460	00					460	00	422	50
Woollen mills (various)	"		2.90	2.00	60.00	283.70	468	00	60	50	13	50	542	00	459	65
Various	"		4.58	3.37	61.42	282.63	558	30	1	37	6	89	566	56	474	32
Forewoman	F.				60.00	233.50	187	26					187	26	142	76
Foundry employe:																
Blacksmith	M.		1.60	1.00	59.00	300.00	475	00			20	00	495	00	384	00
Machinist	"		2.56	1.72	58.80	280.20	473	66	4	66	1	80	480	12	372	54
Moulder	"		3.20	2.04	55.84	251.84	427	27	4	00	7	36	438	63	374	80
Woodworker	"		4.00	2.33	58.89	294.67	440	15			11	11	451	26	410	64
Furniture factory employe:																
Cabinetmaker	"		2.25	1.31	59.19	257.91	406	92	1	69	4	87	413	48	357	41
Carver	"		4.00	3.00	56.50	293.00	547	12					547	12	518	00
Chair maker	"		1.20	0.80	53.40	257.00	316	00			50	00	366	00	300	00
Finisher	"		2.11	1.22	59.78	261.56	372	33	5	56	5	78	383	67	320	56
Ornamenter	"		3.00	1.50	55.00	300.00	575	00					575	00	450	00
Sawyer	"		1.67	1.00	60.00	242.00	425	33					425	33	250	67
Upholsterer	"		1.08	0.54	57.08	266.15	421	92	1	54	3	00	426	46	349	38
Varnisher and polisher	"		1.30	0.90	51.80	237.60	343	16	0	60			343	76	312	80
Furrier	F.				49.80	276.80	181	46					181	46	138	96
Gas and steamfitter	M.		2.71	1.71	58.86	295.71	461	86	7	34			469	20	369	43
Glass blower	"		4.00	3.00	43.44	189.67	604	44	2	22			606	66	574	67
Harnessmarker	"		2.65	1.90	57.30	283.40	403	01	8	50	29	95	441	46	358	34
Hatmaker	"		0.50	0.17	56.17	220.00	401	66			16	67	418	33	340	83
Horseshoer	"		3.50	2.00	59.50	262.83	422	75					422	75	393	17
Hotel employe (with board)																
Bartender	M.				80.17	307.17	325	50	8	33			333	83	227	67
Bell boy		M.			76.00	360.00	114	00	5	00			119	00	85	33
Chambermaid	F.				66.00	362.50	100	00					100	00	85	50

TABLE XXXVIII.—LABOR AND WAGES—*Continued.*

OCCUPATION OR SUB-OCCUPATION.	Unit of workpeople— Over 16.	Unit of workpeople— Under 16.	No. of dependents.	No. of dependents under 16.	Hours employed per week.	Days employed in year.	Yearly wages from occupation.	Extra earnings.	Wife and minor children's earnings.	Total earnings.	Cost of living.
							$ c.	$ c.	$ c.	$ c.	$ c.
Hotel employe(with board)—*Continued.*											
Clerk	M.				72.00	362.50	270 00			270 00	190 00
Cook	F.		0.40	0.40	66.40	360.00	283 20			283 20	183 20
Porter	M.		0.75	0.50	71.50	348.75	286 00	5 00		291 00	218 50
Waiter	F.				70.67	360.00	100 00			100 00	90 00
Various	"				64.00	329.33	92 00			92 00	92 00
"	M.		1.00	0.50	66.00	332.50	255 00	12 50		267 50	222 50
Japanner	"		1.20	1.00	60.00	279.40	464 20	4 00		468 20	355 40
Knitting mill operative:											
Darner	F.				60.00	300.00	204 00			204 00	116 00
Knitter	"		0.20	0.20	57.60	260.20	185 40			185 40	172 80
"		F.			52.00	266.67	118 00			118 00	129 67
Mule spinner	M.		3.50	3.00	60.00	252.00	331 50			331 50	366 50
Stitcher	F.				48.00	262.50	175 00			175 00	175 00
Various	"				60.00	270.00	169 00			169 00	163 25
"	M.		1.17	0.50	60.00	242.33	277 65	5 83	8 33	201 81	245 08
"		M.			60.00	280.00	147 50			147 50	163 00
Laborer (general)	M.		2.89	1.93	58.05	249.47	290 09	12 01	16 24	318 34	303 17
Lamplighter	"		3.50	2.25	33.25	363.75	278 75	125 00		403 75	347 75
Lather	"		1.00	0.80	58.60	146.80	225 83	64 80	5 00	295 63	260 74
Lime burner	"		5.75	3.50	70.50	175.00	275 00	101 25	71 25	447 50	453 00
Lock factory employe:											
Fitter	"		1.88	1.00	60.83		700 00			700 00	550 00
Locksmith	"		2.50	2.00	57.00	300.00	600 00			600 00	405 00
Machinist	"		0.50		50.00		750 00			750 00	675 00
Moulder	"		2.60	2.00	61.20		820 00			820 00	740 00
Polisher	"		0.50		60.00		625 00			625 00	600 00
Various	"		1.50	1.00	58.00		616 25			616 25	585 00
Lumber mill employe:											
Culler	"		3.33	2.67	67.67	283.33	459 00			459 00	393 33
Filer	"		3.33	2.67	63.67	289.00	513 00	40 00		553 00	440 00
Jointer	"		4.33	3.00	60.00	270.33	383 67	25 00	73 33	482 00	400 00
Sawyer	"		2.00	1.33	59.83	291.67	433 50		5 00	438 50	379 33
Various	"		3.29	2.00	69.43	260.00	405 71	14 29	59 29	479 29	387 57
Machine hand (general)	"		2.38	1.48	57.00	259.52	358 67	5 10	7 67	371 44	322 17
Machinist (general)	"		2.64	1.91	57.11	259.82	419 16	15 00	12 50	446 66	359 32
Marble cutter	"		2.29	1.57	58.14	255.57	373 36		17 86	391 22	323 14
Mason (stone)	"		2.38	1.52	57.45	190.83	430 58	8 90	26 38	465 86	390 10
Miller	"		2.53	1.67	67.07	276.27	489 87	18 00	27 93	535 80	407 18
Milliner	F.		0.50	0.50	55.83	291.67	299 83			299 83	235 50
Millwright	M.		3.50	2.00	60.80	276.00	578 40	18 00	40 00	636 40	465 20
Miscellaneous	"		2.83	1.97	57.74	273.74	403 43	20 66	26 61	450 70	367 29
"	F.		0.38	0.25	55.75	289.38	160 44			160 44	151 38
"		M.			55.00	216.67	138 67			138 67	138 67
Newspaper employe:											
Press feeder	M.				57.29	292.14	147 71			147 71	146 86
Pressman	"		2.00	1.13	56.25	297.38	479 63			479 63	411 38
Printer	"		2.13	1.08	55.64	272.51	439 90	3 42	2 44	445 76	415 57
Reporter	"		1.00	0.67	60.00	343.33	450 00	50 00		500 00	433 33
Office boy		M.			54 00	300.50	164 00			164 00	155 00
Organ factory employe:											
Action maker	M.		0.56	0.22	58.44	291.00	406 00	1 11		407 11	313 98
Sawyer	"				59.50	295.00	375 00			375 00	235 00
Various	"		1.00	0.75	57.25	270.00	371 25			371 25	327 75
Packer (general)	M.		1.71	1.14	60.00	246.29	301 00	57 86	8 57	367 43	306 43
"	F.				55.67	280.00	135 83			135 83	140 00
Painter, house	M.		2.79	1.82	59.54	240.64	402 91	10 82	0 93	414 66	358 23
" ornamental	"		1.25	0.25	54.00	252.50	550 38		37 50	587 88	399 75
" various	"		3.00	1.00	57.67	282.67	438 47			438 47	408 33
Paper hanger	"		2.00	0.67	56.00	180.00	298 33			298 33	355 00
Paper mill employe:											
Rag picker		F.			54.00	300.00	222 00			222 00	182 50
Various		M.			60.00	300.00	199 50			199 50	170 50
"	M.		2.80	1.60	60.00	300.00	421 20		49 80	471 00	413 00

TABLE XXXVIII.—LABOR AND WAGES.—*Continued.*

OCCUPATION OR SUB-OCCUPATION.	UNIT OF WORKPEOPLE— Over 16.	Under 16.	No. of dependents.	No. of dependents under 16.	Hours employed per week.	Days employed per week.	Yearly wages from occupation.	Extra earnings.	Wife and minor children's earnings.	Total earnings.	Cost of living.
							$ c.	$ c.	$ c.	$ c.	$ c.
Pattern maker	M.		2.38	1.15	56.77	296.62	625 08	3 85	36 00	658 93	545 69
Photographer	"		2.67	1.33	50.00	263.33	436 67	66 67	0 33	503.67	531 33
Piano maker	"		1.00	0.57	58.00	258.29	470 14	2 86		473 00	371 86
Planer	"		1.60	0.80	59.60	271.40	329 00		30 00	359 00	358 60
Plasterer	"		3.40	2.13	59.13	215.40	428 53	4 80	64 67	498 00	433 60
Plumber	"		2.33	1.75	57.75	274.58	428 27	8 33	7 50	444 10	353 00
Potter	"		1.75	1.25	57 00	231.25	431 25			431 25	431 25
Pump maker	"		3.67	1.67	56.67	266.67	300 00		116 67	416 67	381 67
Railway shop employe:											
Blacksmith	"		2.71	1.86	55.86	260.14	371 14		14 29	385 43	353 57
Car builder	"		3.33	2.67	53.33	270.00	426 00			426 00	393 67
Car repairer	"		3.33	2.11	54.00	257 56	328 39	6 11	9 44	343 94	324 78
Coppersmith	"		5.50	3.50	56.00	289.50	515 55	72 00		587 55	647 50
Fitter	"		4.00	1.00	55.71	267.71	481 70			481 70	457 86
Helper	"		3.33	1.33	58.00	288.67	299 30	6 67		305 97	304 30
Moulder	"		3.00	2.20	56.40	142 00	276 50			276 50	305 09
Painter	"		3.38	1.85	56.31	279.31	400 12	2 46	9 00	411 58	389 88
Woodworker	"		3.47	2.13	57.33	269 80	405 05	4 00	4 80	413 85	381 85
Various	"		4.00	2.67	54.00	288.67	403 78			403 78	387 78
Railway employe:											
Baggageman	"		2.00	1.00	78.00	339.00	447 50		67 50	515 00	441 00
Brakesman	"		1.00	0.56	61.44	308.22	424 17			424 17	364 89
Checker	"				66.00	330.30	330 00			330 00	289 00
Cleaner	"		0.71	0.43	74 43	344.29	328 86		7 14	336 00	248 51
Conductor	"		1.67	1.00	62.50	302.00	629 83			629 83	466 00
Despatcher	"		1.50	1.00	56.00	365.00	902 72			902 72	447 50
Engineer	"		4.00	3.00	79.83	311.33	789 25	16 67	30 00	835 92	511 17
Porter	"		5.00	4.00	65.00	280.00	400 00			400 00	380 00
Signalman	"		3.00	1.33	79.33	365.00	347 83			347 83	321 33
Switchman	"		3.17	2.00	71.50	323.83	454 22			454 22	402 17
Yardman	"		3.20	2.00	72.00	333.60	525 49			525 49	396 20
Various	"		3.83	2.67	70.50	326.00	448 70			448 70	431 33
Rivet makers	"		3.67	2.33	60.00	271.33	432 00		73 17	505 17	462 67
Saddler	"		3.50	1.50	52.50	255.00	356 00			356 00	375 00
Safe maker	"		2.80	1.60	58.80	289.00	430 25			430 25	389 99
Sailor	"		1.33	0.67	84.00	116.67	216 67	16 67		233 34	300 33
Salesman	"		2.08	1.33	62.33	302.83	387 75	25 25		413 00	356 83
Saleswoman	F.				60.00	303.00	200 25			200 25	187 75
Sash, door and blind maker	M.		3.00	2.25	60.00	300.00	500 25			500 25	422 50
Seamstress	F.				51.00	254.33	196 67	13 33		210 00	198 33
Servant, with board	"		0.33	0.33	69.22	364.44	150 33			150 33	181 69
" "	M.		2.00	1.50	71.00	365.00	307 50			307 50	309 00
Sewing machine factory employe:											
Cabinet maker	"		5.00	3.50	60.00	300.00	432 50			432 50	345 00
Lathe hand	"				48.00	262.50	187 50			187 50	171 00
Machinist	"		2.25	1.63	49.75	264.13	419 63	18 00		437 63	389 88
Woodworker	"		5.00	3.00	55.67	293.67	456 33	3 33		459 66	436 00
Various	"		1.67	0.33	51.00	283.33	328 00		33 33	361 33	255 13
Shipper	"		1.00	0.67	60.00	303.33	342 33			342 33	387 33
Shirtmaker	F.				52.00	250.00	183 33	36 67		220 00	169 17
Shoe fitter	M.		1.00	0.33	62.00	266.67	262 57			262 57	226 00
Shoe maker	"		2.62	1.89	59.00	292.11	384 56	15 98	6 92	407 46	352 37
Shovel maker	"		3.43	2.00	51.43	258.14	359 29	25 86		385 15	329 00
Silverplater	"		3.00	2.25	60.00	265.00	412 75			412 75	541 00
Soap maker	"		2.20	1.40	59.60	288.20	410 00			410 00	356 00
Spring fitter	"		2.75	1.75	55.50	242.50	556 25	3 75		560 00	496 25
Spring maker	"		2.75	2.00	49.00	243.75	387 50	12 50		400 00	383 50
Stereotyper	"		1.00	0.50	36.00	313.00	416 00			416 00	487 00
Stone cutter	"		3.00	2.20	58.70	214.10	458 36		7 40	465 76	359 40
Stove foundry employee:											
Fitter	"		2.00	1.00	60.00	270.00	434 38			434 38	415 00
Melter	"		3.50	2.00	57.00	308.50	469 00			469 00	425 00
Moulder	"		1.86	1.00	57.55	257.14	534 54	7 27		541 81	397 28

TABLE No. XXXVIII.—LABOR AND WAGES—*Continued.*

OCCUPATION OR SUB-OCCUPATION.	Unit of workpeople— Over 16.	Unit of workpeople— Under 16.	No. of dependents.	No. of dependents under 16.	Hours employed per week.	Days employed in year.	Yearly wages from occupation.	Extra earnings.	Wife and minor children's earnings.	Total earnings.	Cost of living.
							$ c.	$ c.	$ c.	$ c.	$ c.
Stove foundry employee—*Continued*:											
Mounter	M.		2.36	1.73	59.91	279.82	401 06	11 36		412 42	354 96
Polisher	"		1.67	1.33	56.00	306.00	403 00			403 00	313 33
Press hand	"		0.33		60.00	300.00	211 43			211 43	175 00
Solderer	F.				60.00	258.33	96 54			96 54	86 04
Woodworker	M.		3.80	2.60	60.00	288.00	395 30			395 30	364 60
Various	"		2.60	0.60	59.40	238.60	379 15		42 40	421 55	380 20
Street car driver	"		1.20	0.60	83.40	306.60	380 00			380 00	333 00
Tailor shop employe:											
Cutter	"		3.33	1.67	56.00	311.67	976 33			976 33	666 67
Tailor	"		2.40	1.23	59.87	285.10	467 02	6 67	5 73	479 42	403 30
Tailoress	F.		0.23	0.10	56.27	272.81	204 56	2 19		206 75	188 99
Tannery employe:											
Beam hand	M.		1.83	0.83	59.00	275.33	381 00			381 00	371 83
Currier	"		2.68	1.83	59.29	279.10	380 45	3 05	1 76	385 26	355 66
Tanner	"		1.82	1.12	59.18	274.82	366 69	2 94		369 63	302 06
Yardman	"		2.00	1.00	59.00	270.00	335 00			335 00	335 00
Teamster	"		2.07	1.22	61.83	284.49	330 07	1 22	5 85	337 14	299 59
Telegraph operator	"		0.83	0.33	68.00	315.00	475 00	8 33		483 33	399 50
Telephone employe:											
Lineman	"		1.50	1.00	60.00	300.00	375 00			375 00	300 00
Operator	F.				54.00	310.00	220 00			220 00	220 00
Tinsmith	M.		1.64	1.00	56.73	300.50	426 93	0 91	3 64	431 48	379 46
Tool (edge) works employe:											
Finisher	"		2.50	1.50	60.00	267.50	343 75	20 00		363 75	344 00
Various	"		2.33	1.67	56.00	279.00	386 40	18 33	16 67	421 40	312 50
Wagon maker	"		3.00	1.75	58.25	262.50	416 75	10 00		426 75	366 50
Watchmaker and jeweller	"		1.40	0.80	53.10	253.50	450 90	4 40	10 00	465 30	417 70
Watchman and caretaker	"		2.71	1.82	71.06	339.35	343 16	2 35	14 71	360 22	328 82
Wincey mill employe	"		1.50	1.00	60.00	232.75	249 00			249 00	243 75
Wood turner	"		2.58	1.92	58.50	280.25	429 92	0 83	30 08	460 83	390 58
Woollen mill employe:											
Assorter	"		4.00	2.33	60.00	301.67	369 00			369 00	315 33
Burler	F.				60.00	292.00	175 20			175 20	162 00
Card cleaner	M.		1.00	0.50	60.00	293.75	278 75			278 75	256 50
Carder	"				60.00	268.75	202 75			202 75	186 50
"		M.			60.00	290.00	143 50			143 50	125 50
Card helper		"			60.00	250.00	125 00			125 00	125 00
Drawing frame tender	F.				60.00	300.00	187 50			187 50	150 00
Dyer	M.		2.86	1.88	60.00	275.37	346 49	0 75	97 00	444 24	382 50
Loom fixer	"		2.00	1.33	60.00	299.33	436 67			436 67	319 67
Picker		M.			60.00	233.50	93 40			93 40	93 40
Piecer		"			60.00	300.00	148 50			148 50	125 00
Scourer	M.		0.75	0.25	60.00	285.00	285 00			285 00	245 00
Shears tender	"				60.00	302.50	317 50			317 50	217 50
Spinner	"		2.00	1.50	60.00	295.87	330 80		15 63	346 43	281 75
Winder		F.			60.00	187.50	81 50			81 50	111 50
"	F.				60.00	258.75	187 75			187 75	144 00
Weaver	"		0.10	0.05	60.00	253.10	194 52	0 43		194 95	143 43
Various	"		0.10	0.10	60.00	264.70	161 69			161 69	125 90
"	M.		3.12	1.92	60.00	270.04	312 35		4 27	316 62	307 01
"		M.			60.00	288.75	138 75			138 75	123 00
"		F.			60.00	282.57	145 60			145 60	120 43
Average for all occupations	M.		2.45	1.57	58.95	269.89	403 18	7 56	10 52	421 26	359 60
		M.			59.29	273.14	129 45	50		129 95	121 82
	F.		0.19	0.12	57.97	283.51	182 60	1 22		183 82	159 55
		F.			57.14	265.59	126 82			126 82	117 64
Average for all classes	1885		2.15	1.38	58.85	271.28	372 98	6 72	9 15	388 85	332 50
	1884		2.18		59.10	265.17	372 29	4 33	6 69	383 31	334 47

LABOR AND WAGES.

TABLE No. XXXIX.—Showing by industries the average of time employed, wages earned, and cost of living of 2,637 workpeople in Almonte, Belleville, Brantford, Brockville, Chatham, Cornwall, Galt, Gananoque, Guelph, Hamilton, Hespeler, Kingston, London, Oshawa, Ottawa, Peterborough, St. Thomas, Stratford and Toronto, for the year ending October 31, 1885.

INDUSTRIES.	No. of dependents.	No. of dependents under 16.	Hours employed per week.	Days employed in year.	Yearly wages from occupation.	Extra earnings.	Wife and minor children's earnings.	Total earnings.	Total cost of living.
Agricultural implement works	2.81	1.94	58.60	247.32	413 94	2 07	9 57	425 58	386 55
Boiler and engine works	2.00	1.25	57.91	271.69	452 79	.....	19 36	472 15	360 43
Boot and shoe factory	2.47	1.74	58.89	286.38	362 02	14 17	6 14	382 33	330 36
Box and bag (paper) factory	0.20	0.18	57.04	298.82	163 63	.....	.....	163 63	152 17
Brewery	2.17	1.17	61.00	300.00	394 78	.....	.....	394 78	292 94
Carriage works	2.28	1.42	58.68	269.86	422 28	7 79	15 16	445 23	380 23
Cigar factory	0.71	0.29	55.54	251.38	257 50	6 92	.....	264 42	221 14
Confectionary	0.95	0.61	59.87	260.87	273 41	5 22	.....	278 63	224 87
Cotton mill	0.87	0.63	59.77	253.60	201 22	3 80	17 35	222 37	207 66
Edge tool works	2.40	1.60	57.60	274.40	369 34	19 00	10 00	398 34	325 10
Foremen	3.73	2.32	59.95	291.59	554 77	10 60	10 25	575 62	460 66
Foundry (general)	2.94	1.87	57.67	272.70	450 93	3 38	6 70	461 01	379 68
Furniture factory	1.88	1.12	57 37	258.42	474 83	9 22	3 86	487 91	344 48
Hotel (with board)	0.18	0.14	66.54	344.14	206 67	3 04	.....	209 71	148 75
Knitting mill	0.58	0.38	57.69	262.46	205 31	1 35	1 92	208 58	191 44
Lock factory	1.81	1.14	58.90	317.00	700 71	.....	.....	700 71	604 76
Lumber mill	3.09	2.14	64.50	277.18	432 14	13 41	30 23	475 78	394 95
Newspaper	1.91	0.99	55.17	278.61	421 04	4 40	1 96	427 40	389 69
Organ factory	0.60	0.33	58.27	285.93	392 60	0 67	.....	393 27	307 12
Paper mill	1.56	0.89	58.67	300.00	327 67	.....	27 67	355 34	307 89
Railway shop	3.45	2.02	55.84	260.25	392 28	4 55	5 84	402 67	383 81
Railway (road)	2.41	1.52	69.18	322.37	487 82	4 32	3 90	496 04	387 38
Sewing machine factory	2.11	1.67	51.89	276.06	386 11	8 56	5 56	400 23	346 17
Stove foundry	1.97	1.14	58.71	269.37	411 36	4 83	3 59	419 78	339 49
Tailor shop	1.01	0.51	56.83	277.92	311 81	3 54	1 81	317 16	271 75
Tannery	2.36	1.53	59.23	277.38	375 58	2 65	1 09	379 32	342 70
Woollen mill	1.15	0.72	60.00	272.85	239 79	0 12	15 67	255 58	213 23

NOTE.—In this table the number of dependents is the average for the total number of workpeople, the worker himself not being included. Foremen are separated from general workers.

LABOR AND WAGES.

TABLE No. XL.—Showing the average of time employed, wages earned and cost of living of workpeople, in Kingston, London, Oshawa, Ottawa, Peterborough, St. Thomas, Stratford and Toronto, for the year ending

Number.	SCHEDULE.	Almonte.	Belleville.	Brantford.	Brockville.	Chatham.	Cornwall.	Galt.	Gananoque.
1	No. of dependents (exclusive of worker).	3.93	3 04	3.30	3.64	3.07	3.86	3.57	3.81
2	No. of dependents under 16 years	2.60	1.55	2.07	2.18	1.94	2.57	2.22	2.56
3	Hours employed per week	60.99	57.08	58.84	62.98	60.45	60.86	58.76	56.17
4	Days employed in year	269.99	255.38	256.88	294.81	273.29	275.00	275.74	275.59
5	Yearly wages	294.12	371.59	325.73	416.87	409.20	379.29	427.85	384.78
6	Extra earnings	4.92	23.54	5.26	2.19	4.36	.....	3.25	15.92
7	Wife and minor children's earnings	16.36	28.58	16.50	7.58	4.65	35.71	10.71	13.35
8	Total earnings of worker :—								
(1)	Without dependents	251.38	329.19	233.16	297.32	367.07	.....	383.16	336.75
(2)	With dependents	382.22	472.35	394.77	497.94	428.15	415.00	464.18	467.56
(3)	With and without dependents	315.40	423.71	347.49	426.64	418.21	415.00	441.81	414 05
9	Cost of living to worker :—								
(1)	Without dependents	179.88	267.59	192.36	205.47	237.36	.....	231.53	189.11
(2)	With dependents	321.12	411.76	343.48	437.26	384.31	379.29	397.91	392.55
(3)	With and without dependents	249.31	362.78	299.27	354.88	360.38	379.29	351.96	309.33
10	Surplus earnings of worker :—								
(1)	Without dependents	71.50	61.60	40.80	91.85	129.71	.....	151.63	147.64
(2)	With dependents	61.10	60.59	51.29	60.68	43.84	35.71	66.27	75.01
(3)	With and without dependents	66.09	60.93	48.22	71.76	57.83	35.71	89.85	104.72
11	Cost to worker with dependents :—								
(1)	Of rent	58.82	56.43	58.86	71.04	65.88	.....	70.18	64.21
(2)	Of fuel	38.69	33.59	40.51	45.12	28.76	35.00	40.81	38.44
(3)	Of clothing (per capita)	13.51	24.65	25.88	19.05	17.78	.....	19.45	20.01
(4)	Of food (per capita)	33.13	57.53	43.44	52.38	.....	.....	50.77	43.60
12	Cost of clothing to worker without dependents	37.65	82.57	91.67	56.47	69.17	.....	50.18	53.85

NOTE.—In this table the number of dependents

LABOR AND WAGES.

Almonte, Belleville, Brantford, Brockville, Chatham, Cornwall. Galt, Gananoque, Guelph, Hamilton, Hespeler, October 31, 1885.

Guelph.	Hamilton.	Hespeler.	Kingston.	London.	Oshawa.	Ottawa.	Peterboro'.	Stratford.	St. Thomas.	Toronto.	The Province.		Number.
											1885.	1884.	
4.17	3.57	3.61	3.85	3.35	3.39	4.32	3.35	3.84	3.58	3.20	3.54	3.34	1
2.71	2.23	2.41	2.70	2.03	2.19	3.13	2.35	2.54	2.30	1.89	2.26	.....	2
55.92	56.22	59.76	62.11	58.55	58.50	61.15	59.43	59.75	63.68	55.17	58.85	59.10	3
266.08	235.71	256.75	272.29	258.90	224.27	302.12	303.36	288.86	269.51	273.68	271.28	265.17	4
365.68	429.06	252.92	350.40	320.60	327.27	447.34	428.33	403.77	449.07	352.97	372.98	372.29	5
8.38	7.79	10.37	9.83	10.28	1.75	7.03	.....	4.54	6.24	2.65	6.72	4.33	6
7.90	3.32	26.62	7.37	8.89	2.69	8.19	1.40	2.99	1.88	2.74	9.15	6.69	7
													8
305.72	338.69	200.57	252.40	260.52	270.09	383.41	351.34	283.93	420.02	247.73	297.46	294 20	(1)
419.59	459.05	444.21	442.27	387.67	345.72	527.43	524.55	509.10	471.02	462.13	447.60	430 95	(2)
381.96	440.17	289.91	367.60	339.77	331.71	462.56	429.73	411.30	457.19	358.36	388.85	383 31	(3)
													9
223.37	265.78	162.41	204.03	180.66	228.58	289.63	302.33	203.21	323.69	186.90	225.71	230.11	(1)
387.07	428.30	374.70	394.56	363.38	344.12	428.48	478.09	415.13	443.14	444.54	401.17	390.28	(2)
332.98	399.19	240.25	319.63	294 54	322.69	365.94	381.87	323.09	410.75	319.85	332.50	334.47	(3)
													10
82.35	72.91	38.16	48.37	79.86	41.51	93.78	49.01	80.72	96.33	60 83	71.75	64.09	(1)
32.52	30.75	69.51	47.71	24.29	1.60	98.95	46.46	93.97	27.88	17.57	46.43	40.67	(2)
48.98	40.98	49.66	47.97	45.23	9.02	96.62	47.86	88.21	46.44	38.51	56.35	48.84	(3)
													11
61.18	86.08	50.96	69.50	73.14	52.00	88.81	71.22	64.89	79.43	109.95	74.41	.....	(1)
40.14	38.84	33.70	44.05	40.48	39.67	37.85	50.75	42.10	42.64	50.41	40.53	.....	(2)
14.16	18.05	14.70	18.08	16.95	10.00	22.16	35.00	25.68	20.30	18.84	19.03	.....	(3)
42.45	59.38	46.91	39.50	46.60	66.50	52.46	75.83	37.71	49.05	53.45	47.67	.....	(4)
59.88	52.53	34.84	66.79	50.07	.....	116.56	86.67	46.66	95.31	54.67	55.09	.....	12

is the average for workers having dependents only.

LABOR AND WAGES.

TABLE No. XLI.—Showing the aggregate and average of time employed, wages earned, and cost of living of 2,637 workpeople, in Almonte, Belleville, Brantford, Brockville, Chatham, Cornwall, Galt, Gananoque, Guelph, Hamilton, Hespeler, Kingston, London, Oshawa, Ottawa, Peterborough, St. Thomas, Stratford and Toronto, for the year ending October 31, 1885.

SCHEDULE.	Male.				Female.				Total.	
	Over 16.		Under 16.		Over 16.		Under 16.			
	Aggregate.	Average.	Aggregate.	Average.	Aggregate.	Average.	Aggregate.	Average.	Aggregate.	Average.
No. of workers	2,295		56		264		22		2,637	
No. without dependents	719		56		235		22		1,032	
No. with dependents	1,576				29				1,605	
No. of dependents	5,632	3.57			50	1.72			5,682	3.54
No. of dependents under 16	3,602	2.29			31	1.07			3,633	2.26
Hours employed per week	135,297	58.95	3,320	59.29	15,304	57.97	1,257	57.14	155,178	58.85
Days employed in year	619,389	269.89	15,296	273.14	74,846	283.51	5,843	265.59	715,374	271.28
Yearly wages	925,294	403.18	7,249	129.45	48,205	182.60	2,790	126.82	983,538	372.98
Extra earnings	17,359	7.56	28	.50	323	1.22			17,710	6.72
Wife and minor children's earnings	24,132	10.52							24,132	9.15
Total earnings	966,785	421.26	7,277	129.95	48,528	183.82	2,790	126.82	1,025,380	388.85
Total earnings of workers :—										
Without dependents	254,037	353.32	7,277	129.95	42,872	182.43	2,790	126.82	306,976	297.46
With dependents	712,748	452.25			5,656	195.03			718,404	447.60
Cost of living to workers :—										
Without dependents	186,879	259.92	6,822	121.82	36,638	155.90	2,588	117.64	232,927	225.71
With dependents	638,401	405.08			5,483	189.07			643,884	401.17
With and without dependents	825,280	359.60	6,822	121.82	42,121	159.55	2,588	117.64	876,811	332.50
Surplus earnings of workers :—										
Without dependents	67,158	93.40	455	8.13	6,234	26.53	202	9.18	74,049	71.75
With dependents	74,347	47.17			173	5.96			74,520	46.43
With and without dependents	141,505	61.66	455	8.13	6,407	24.27	202	9.18	148,569	56.35
Cost to workers with dependents, of :—										
Rent										74.41
Fuel										40.53
Clothing (per capita)										19.03
Food (per capita)										47.67
Cost of clothing to workers :—										
Without dependents		60.95		24.33		43.77		29.50		55.09

Note.—The number of dependents in this table does not include the worker.

LABOR AND WAGES.

TABLE No. XLII.—Showing the statistics of 2,637 workpeople whose earnings were more than, equal to, and less than the cost of living for the year ending October 31, 1885; also the statistics of average, over average and under average of surplus earnings of 2,637 workpeople for the year.

Earnings more than cost of living.	With dependents.						Without dependents.						With and without dependents.					
	No. of workers.	Average No. of dependents.	Average No. of days employed.	Average yearly earnings.	Average cost of living.	Surplus.	No. of workers.	Average No. of days employed.	Average yearly earnings.	Average cost of living.	Surplus.		No. of workers.	Average No. of days employed.	Average yearly earnings.	Average cost of living.	Surplus.	
				$ c.	$ c.	$ c.			$ c.	$ c.	$ c.				$ c.	$ c.	$ c.	
$0 to $10	67	3.51	253.28	392 96	387 44	5 52	46	264.57	191 46	185 09	6 37		113	257.88	310 93	305 07	5 86	
$10 to $20	80	3.30	267.31	401 91	386 09	15 82	38	270.71	184 22	168 39	15 83		118	268.41	331 80	315 98	15 82	
$20 to $30	79	3.81	272.53	422 13	396 31	25 82	56	266.11	211 38	185 90	25 48		135	269.87	334 71	309 03	25 68	
$30 to $40	48	3.62	282.19	435 14	398 46	36 68	34	264.21	228 99	193 27	35 72		82	274.73	349 66	313 28	36 28	
$40 to $50	104	3.52	282.82	467 14	418 76	48 38	58	278.84	308 40	260 62	47 78		162	281.40	410 31	362 14	48 17	
$50 to $75	133	3.23	274.06	449 16	384 61	64 55	62	285.94	267 60	203 30	64 30		195	277.32	391 44	326 96	64 48	
$75 to $100	126	3.25	285.36	500 09	407 96	92 13	89	280.42	346 89	252 85	94 04		215	288.31	436 67	343 75	92 92	
$100 to $150	136	3.04	282.26	514 01	386 50	127 51	103	282.74	382 44	251 64	130 80		239	282.46	457 31	328 38	128 93	
$150 to $200	90	3.68	284.51	583 06	404 39	178 67	78	282.68	430 63	253 72	176 91		168	283.66	512 29	334 43	177 86	
$200 to $300	67	3.63	292.92	677 83	432 84	244 99	78	288.55	507 49	261 05	246 44		145	290.57	586 20	340 43	245 77	
$300 to $400	11	4.09	299.91	817 09	465 82	351 27	23	288.65	576 73	236 87	339 86		34	292.00	654 49	310 94	343 55	
$400 to $500	9	3.33	270.56	857 45	406 56	450 89	4	322.50	806 96	356 25	450 71		13	286.54	841 92	391 08	450 84	
Over $500	....	....	.....	.....	.....	.....	2	306.50	837 50	273 50	564 00		2	306.50	837 50	273 50	564 00	
Total	950	3.41	278.53	493 21	400 14	93 07	671	279.15	345 03	231 91	113 12		1621	278.79	431 87	330 50	101 37	
Earnings equal to cost of living	410	3.59	267.14	396 59	396 59	.....	300	277.99	218 87	218 87	.....		710	271.72	321 50	321 50	.....	
Earnings less than cost of living.						Deficit.					Deficit.							Deficit.
$0 to $10	41	3.71	250.24	395 95	401 10	5 15	17	243.65	166 99	172 35	5 36		58	248.31	328 84	334 05	5 21	
$10 to $20	30	4.03	249.90	368 70	385 28	16 58	6	215.67	134 32	151 50	17 18		36	244.19	329 64	346 32	16 68	
$20 to $30	30	3.77	249.53	386 84	412 73	25 89	8	190.12	156 36	182 50	26 14		38	237.03	338 31	364 26	25 95	
$30 to $40	24	3.62	234.04	356 53	392 08	35 55	11	224.91	163 74	200 91	37 17		35	231.17	295 94	332 00	36 06	
$40 to $50	27	3.96	238.15	351 03	397 78	46 75	9	202.89	170 27	216 56	46 29		36	229.33	305 84	352 47	46 63	
$50 to $75	38	4.05	223.90	345 34	407 81	62 47	8	206.00	134 88	192 38	57 50		46	220.78	308 74	370 34	61 60	
$75 to $100	19	3.68	217.84	335 92	421 92	86 00	2	200.00	246 50	330 00	83 50		21	216.14	327 40	413 17	85 77	
$100 to $150	15	4.53	214.60	303 69	433 60	129 91	....	.....	.....	.....	.....		15	214.60	303 69	433 60	129 91	
$150 to $200	10	4.30	191.00	309 03	481 60	172 57	....	.....	.....	.....	.....		10	191.00	309 03	481 60	172 57	
$200 to $300	11	5.19	197.09	287 64	525 73	238 09	....	.....	.....	.....	.....		11	197.09	287 64	525 73	238 09	
Total	245	3.97	233.61	356 12	412 86	56 74	61	218.11	160 67	191 10	30 43		306	230.52	317 16	368 66	51 50	
						Surplus.					Surplus.							Surplus.
Average	1605	3.54	268.76	447 60	401 17	46 43	1032	275.21	297 46	225 71	71 75		2637	271.28	388 85	332 50	56 35	
Over average	652	3.34	283.08	529 35	403 69	125 66	391	284.81	424 87	254 40	170 47		976	282.91	484 00	334 77	149 23	
Under average	953	3.68	258.97	391 68	399 45	-7 77	641	269.35	219 74	208 20	11 54		1661	264.45	332 93	331 17	1 76	

FOOD CONSUMPTION.

TABLE No. XLIII.—Showing the quantity and value of food supplies, and the average cost of a ration of food, at certain institutions in Ontario for the fourteen days ending February 19, 1886.

I.—SCHOOLS AND COLLEGES: DESCRIPTION.

Consecutive Number.	No. of meals supplied to persons— Under 5 years.	5 to 10 years.	10 to 15 years.	Over 15 years.	Total No. of meals.	No. of rations.*	No. of rations per day.	Daily hours of— Manual labor.	Outdoor recreation.
1		1,932	5,208	4,513	11,653	3,884	277.4	3	6
2		546	1,682	4,709	6,937	2,312	165.1		5
3				3,401	3,401	1,134	81.0	4	
4	42		102	2,517	2,661	887	63.3		1
5				1,983	1,983	661	47.2		3
Totals	42	2,478	6,992	17,123	26,635	8,878	634.0		

* Allowing three meals for each day's ration of one person.

Quantity and Value for each Institution and Totals.

Food Materials.	No. 1. Quantity.	No. 1. Value	No. 2. Quantity.	No. 2. Value	No. 3. Quantity.	No. 3. Value	No. 4. Quantity.	No. 4. Value	No. 5. Quantity.	No. 5. Value	Totals. Quantity.	Totals. Value
	lbs.	$ c.	lbs.	$ c.	lbs.	$ c.	lbs.	$ c.	lbs.	$ c.	lbs.	$ c.
Animal albuminoids:												
Beef	1,489	100 52	1,240	86 80	741	61 03	305	36 85	182	20 02	3,957	305 22
Mutton	420	28 35	20	1 40	122	9 15	71	8 87	141	15 51	774	63 28
Pork, fresh	180	12 15	190	13 30	56	3 36	23	2 87	35	3 85	484	35 53
Corned beef	250	16 90			51	5 15			55	4 95	356	27 00
Smoked ham			14	1 96	6	0 75	16	2 04	15	2 10	51	6 85
Bacon	200	18 00	10	1 40			8	1 00			218	20 40
Other cured meats			20	2 80	61	6 12					81	8 92
Fowl, chicken	15	1 50	10	1 20							25	2 70
" turkey	28	3 00	14	1 68							42	4 68
Fish, fresh	200	14 00	80	7 20			43	2 58			323	23 78
" canned	4	0 50					22	2 40	9	1 08	35	3 98
" dry or smoked	40	3 20	6	0 60	35	3 50			16	1 52	97	8 82
" salted			7	0 37					15	1 20	22	1 57
Oysters	5	0 70	5	1 00							10	1 70
Fresh milk	3,785	58 80	2,266	44 00	914	10 65	587	14 82	1,009	17 64	8,561	145 91
Cheese, full milk	50	4 75	16	2 00	9	0 90	16	2 18	12	1 44	103	11 27
Butter	350	76 35	160	32 00	142	28 40	111	17 76	94	18 80	857	173 31
Eggs	36	4 80	30	4 40	23	3 10	12	2 40	15	2 50	116	17 20
Vegetable albuminoids:												
White flour	3,528	78 66	190	4 37	102	2 04	156	7 41	120	3 00	4,096	95 48
Graham flour	20	0 60									20	0 60
Buckwheat flour	50	1 00									50	1 00
Oatmeal	196	4 50	300	6 37	20	0 60	20	0 80	50	1 50	586	13 77
Cracked wheat			10	0 25					50	1 25	60	1 50
Wheaten bread			1,680	25 20	1,045	22 18	308	9 24	195	5 71	3,228	62 33
Graham bread							154	4 72	204	4 59	358	9 31
Soda crackers	59	3 99	35	2 80	40	3 55	24	1 92	42	2 94	200	15 20
Pearled barley	8	0 28	14	0 56			5	0 25	10	0 40	37	1 49
Beans	50	0 88	20	0 40	25	0 75	8	0 32			103	2 35
Starchy foods:												
Corn meal	50	1 00	10	0 20			14	0 42			74	1 62
Rice	60	2 40	45	2 00	5	0 20			6	0 27	116	4 87
Potatoes	3,600	24 00	2,100	17 50	1,003	5 02	660	4 40	600	5 00	7,963	55 92
Turnips	240	2 00	60	0 40	89	0 29	148	2 22	120	0 60	657	5 51
Beets	90	0 75	180	1 20			13	0 26			283	2 21
Carrots			15	0 10	52	0 28	40	0 60			107	0 98
Parsnips			120	0 80	28	0 14					148	0 94
Cabbage	108	1 80	60	1 60	62	0 62	12	0 10	36	0 60	278	4 72

Note.—Oysters and molasses are computed at 2½ lbs. and milk at 2.575 lbs. per imperial quart, and eggs at 1½ lbs. per doz.

TABLE No. XLIII.—FOOD CONSUMPTION.—*Continued.*

Food Materials.	No. 1.		No. 2.		No. 3.		No. 4.		No. 5.		Totals.	
	Quantity.	Value	Quantity.	Value	Quantity.	Value	Quantity.	Value	Quantity.	Value	Quantity.	Value
Starchy foods—*Continued.*	lbs.	$ c.	lbs.	$ c.	lbs.	$ c.	lbs.	$ c.	lbs.	$ c.	lbs.	$ c.
Other vegetables					123	1 23					123	1 23
Apples	2,100	25 20	900	13 50	187	2 49	176	4 40	360	5 00	3,723	50 59
Other green fruits			5	0 30			48	1 20			53	1 50
Preserved fruits	156	15 60	60	5 00	137	8 25	25	1 80	102	12 75	480	43 40
Starch			3	0 40	8	0 77					11	1 17
Sugar	290	17 60	550	0 44	293	14 88	139	8 09	130	9 43	1,402	94 60
Molasses	300	12 00	23	1 50	20	1 20	20	1 50			363	16 20
Miscellaneous:												
Tea	50	16 04	32	15 10	18	9 25	8	3 60	12	5 40	120	49 39
Coffee	10	3 00	24	6 75	16	3 87	9	2 80	10	3 00	69	19 42
Condiments		5 60		2 00		3 20		1 50		3 50		15 80

II.—PROVINCIAL PRISONS: DESCRIPTION.

Consecutive Number.	No. of meals supplied to persons—				Total No. of meals.	No. of rations.	No. of rations per day.	Daily hours of—	
	Under 5 years.	5 to 10 years.	10 to 15 years.	Over 15 years.				Manual labor.	Outdoor recreation.
1				23,859	23,859	7,953	568	8	
2				17,226	17,226	5,742	410	9½	
3	42	504	483	6,300	7,329	2,443	175	10	2½
4		588	4,158	4,823	9,569	3,190	228	4	3
Totals	42	1,092	4,641	52,208	57,983	19,328	1,381		

Quantity and Value for each Institution and Totals.

Food Materials.	No. 1.		No. 2.		No. 3.		No. 4.		Totals.	
	Quantity.	Value	Quantity.	Value	Quantity.	Value	Quantity.	Value	Quantity.	Value
Animal albuminoids:	lbs.	$ c.	l.s.	$ c.	lbs.	$ c.	lbs.	$ c.	lbs.	$ c.
Beef	4,152	183 94	4,263	277 10	996	59 76	986	64 09	10,397	584 89
Pork, salted	1,905	114 33					430	23 65	2,335	137 98
Corned beef			845	29 57					845	29 57
Fish, dry or smoked					86	6 02			86	6 02
Fresh milk			432	10 08	615	14 34	1,658	19 32	2,705	43 74
Butter	103	17 60			61	10 37			164	27 97
Vegetable albuminoids:										
White flour	160	4 24			3,552	54 00	48	1 10	3,760	59 34
Oatmeal			621	13 97	170	3 40			791	17 37
Wheaten bread	14,592	218 88	11,186	223 72			4,466	78 15	30,244	520 75
Graham Bread	1,408	21 12							1,408	21 12
Pearled barley	310	7 75	114	2 56	24	0 72			448	11 03
Beans	420	9 45							420	9 45
Pease	320	3 74	159	3 18	44	1 10	100	2 50	623	10 52
Starchy foods:										
Corn meal					5	0 15	600	15 00	605	15 15
Rice	185	6 29	312	12 48	67	3 08			564	21 85
Potatoes	6,872	68 72	4,175	31 31	345	2 58	2,160	10 80	1,352	113 41
Turnips			374	2 80	930	7 25	600	1 20	1,904	11 25
Beets	960	6 40	190	1 90	135	1 00			1,285	9 30

TABLE No. XLIII.—FOOD CONSUMPTION.—*Continued.*

Food Materials.	No. 1.		No. 2.		No. 3.		No. 4.		Totals.	
	Quantity.	Value	Quantity.	Value	Quantity.	Value	Quantity.	Value	Quantity.	Value
Starchy foods—*Continued.*	lbs.	$ c.	lbs.	$ c.	lbs.	$ c.	lbs.	$ c.	lbs.	$ c.
Carrots	1,020	5 10	544	4 08	210	1 75	.....	.....	1,774	10 93
Parsnips	.....	.....	200	1 50	345	2 87	.....	.....	545	4 37
Cabbage	1,860	31 00	410	4 00	288	2 00	.....	.....	2,558	37 00
Other vegetables	960	13 65	76	1 14	.....	.....	.....	.....	1,036	14 79
Preserved fruits	.....	.....	.....	.....	6	0 36	.....	.....	6	0 36
Sugar	471	26 38	179	10 74	56	3 36	.....	.....	706	40 48
Molasses	322	10 15	340	15 84	690	27 60	82	3 84	1,434	57 43
Miscellaneous:										
Tea	112	25 31	44	14 63	34	8 16	.....	.....	190	48 10
Coffee	14	3 15	44	7 00	.....	.....	32	2 56	90	12 71
Condiments	.....	10 35	.....	.....	.....	.....	.....	1 26	.....	11 61

III.—PROVINCIAL LUNATIC ASYLUMS: DESCRIPTION.

Consecutive Number.	No. of meals supplied to persons—				Total No. of meals.	No. of rations.	No. of rations per day.	Daily hours of—
	Under 5 years.	5 to 10 years.	10 to 15 years.	Over 15 years.				Manual labor or out-door recreation.
1	208	350	126	42,320	43,004	14,335	1,024	.....
2	.....	.....	.....	27,342	27,342	9,114	651	6
3	42	84	42	32,584	32,752	10,917	780	8
4	168	.....	.....	28,952	29,120	9,707	693	9
Totals	418	434	168	131,198	132,218	44,073	3,148	.....

Quantity and Value for each Institution and Totals.

Food Materials.	No. 1.		No. 2.		No. 3.		No. 4.		Totals.	
	Quantity.	Value	Quantity.	Value	Quantity.	Value	Quantity.	Value	Quantity.	Value
Animal albuminoids:	lbs.	$ c.	lbs.	$ c.	lbs.	$ c.	lbs.	$ c.	lbs.	$ c.
Beef	7,400	351 50	3,520	246 40	5,690	282 00	5,470	290 85	22,080	1,170 75
Mutton	.....	.....	2,200	154 00	253	14 74	330	16 50	2,783	185 24
Prepared meat—Corned beef	.....	.....	750	52 50	953	76 25	.....	.....	1,703	128 75
" Smoked ham	14	1 61	.....	.....	28	3 36	.....	.....	42	4 97
" Bacon	10	0 89	.....	.....	120	14 20	326	22 82	456	37 91
Fowl—Chicken	.....	.....	.....	.....	20	1 60	.....	.....	20	1 60
" Turkey	86	8 75	.....	.....	36	4 32	.....	.....	122	13 07
" Goose	.....	.....	.....	.....	24	2 88	.....	.....	24	2 88
Fish, fresh	600	37 00	320	25 60	500	40 00	400	20 00	1,820	122 60
" cured	5	0 25	.....	.....	.....	.....	14	3 10	19	3 35
Oysters	3	0 50	.....	.....	.....	.....	.....	.....	3	0 50
Fresh milk	7,725	120 00	3,605	56 00	4,676	90 80	5,189	100 75	21,194	367 55
Butter	1,156	196 52	730	127 75	825	140 25	706	127 00	3,417	591 52
Cheese, full milk	122	12 20	100	10 00	134	14 75	61	6 10	417	43 05
Eggs	90	13 20	113	17 75	63	14 50	30	5 00	296	50 45
Vegetable albuminoids:										
White flour	515	11 16	400	8 00	760	17 00	120	3 25	1,795	39 41
Graham flour	.....	.....	.....	.....	.....	.....	60	1 65	60	1 65
Oatmeal	1,166	23 32	600	15 00	700	14 50	300	8 25	2,766	61 07
Crushed wheat	.....	.....	480	9 60	.....	.....	.....	.....	480	9 60
Wheaten bread	13,124	295 29	9,100	227 50	12,167	304 00	9,572	215 32	43,963	1,042 11
Graham bread	40	0 90	.....	.....	.....	.....	.....	.....	40	0 90

TABLE No. XLIII.—FOOD CONSUMPTION.—*Continued.*

Food Materials.	No. 1.		No. 2.		No. 3.		No. 4.		Totals.	
	Quantity.	Value	Quantity.	Value	Quantity.	Value	Quantity.	Value	Quantity.	Value
	lbs.	$ c.	lbs.	$ c.	lbs.	$ c.	lbs.	$ c.	lbs.	$ c.
Vegetable albuminoids—*Continued.*										
Soda crackers	45	2 25			28	6 00	21	2 10	94	10 35
Pearled barley	10	0 25	270	8 78	139	3 57	228	6 50	647	19 10
Beans	210	4 37					420	8 40	630	12 77
Pease					180	3 80	300	6 75	480	10 55
Starchy foods:										
Corn meal	25	0 40	160	3 20	40	1 20	120	3 20	345	8 10
Rice	300	10 50	300	12 00	308	12 32	140	7 00	1,048	41 82
Potatoes	17,640	117 60	5,580	46 50	7,920	92 50	7,200	60 00	38,340	316 60
Turnips	630	2 10			540	5 50	720	4 00	1,890	11 60
Beets	840	2 80			86	1 20	720	6 00	1,646	10 00
Carrots	5,100	17 00			895	12 00	720	4 00	6,715	33 00
Parsnips	120	0 40			1,680	22 50	720	6 00	2,520	28 90
Cabbage	1,545	10 30			2,662	26 00	600	5 00	4,807	41 30
Other vegetables	1,216	17 90	3,240	16 20			720	10 00	5,176	44 00
Apples	780	9 00	1,050	16 80	400	4 50	360	4 50	2,590	34 80
Other green fruits							70	2 25	70	2 25
Preserved fruits	1,259	90 88	600	87 00	400	22 00	329	25 32	2,588	225 20
Starch	7	0 63					35	7 00	42	7 63
Sugar	1,463	84 12	703	49 21	1,245	87 00	862	51 72	4,273	272 05
Molasses	690	13 15	309	17 10	268	12 50	350	20 40	1,617	80 15
Miscellaneous:										
Tea	220	88 00	137	68 58	202	76 38	130	52 00	689	284 96
Coffee	236	21 24	115	36 80	61	12 25	135	38 00	547	108 29
Condiments		25 92		4 50		10 00		10 50		50 92

IV.—SUMMARY OF INSTITUTIONS: DESCRIPTION.

Institutions.	Number.	No. of meals supplied to persons—				Total meals.	Total No. of rations.	No. of rations per day.
		Under 5 years.	5 to 10 years.	10 to 15 years.	Over 15 years.			
Schools and Colleges	5	42	2,473	6,992	17,123	26,635	8,878	624
Provincial Prisons	4	42	1,092	4,641	52,208	57,983	19,328	1,381
Lunatic Asylums	4	418	434	168	131,198	132,218	44,073	3,148
Totals	13	502	4,004	11,801	200,529	216,836	72,279	5,163

Quantity and Value for each class of Institutions and Totals.

Food Material.	Schools and Colleges.		Provincial Prisons.		Lunatic Asylums.		Totals.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	lbs.	$ c.	lbs.	$ c.	lbs.	$ c.	lbs.	$ c.
Animal albuminoids:								
Beef	3,957	305 22	10,397	584 89	22,080	1,170 75	36,434	2,060 86
Mutton	774	63 28			2,783	185 24	3,557	248 52
Pork, fresh	484	35 53					484	35 53
" salt			2,335	137 98			2,335	137 98
Corned beef	356	27 00	845	29 57	1,703	128 75	2,904	185 32
Smoked ham	51	6 85			42	4 97	93	11 82
Bacon	218	20 40			456	37 91	674	58 31
Other meats	81	8 92					81	8 92
Fowl—Chicken	25	2 70			20	1 60	45	4 30
" Turkey	42	4 98			122	13 07	164	17 75
" Goose					24	2 88	24	2 88

TABLE No. XLIII.—FOOD CONSUMPTION.—*Continued.*

Food Materials.	Schools and Colleges.		Provincial Prisons.		Lunatic Asylums.		Totals.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
Animal albuminoids.—*Con.*	lbs.	$ c.	lbs.	$ c.	lbs.	$ c.	lbs.	$ c.
Fish—Fresh	323	23 78	.....	.....	1,820	122 60	2,143	146 38
" Canned	35	3 98	.....	.....	.....	.....	35	3 98
" Dry or smoked	97	8 82	86	6 02	19	3 35	202	18 19
" Salted	22	1 57	.....	.....	.....	.....	22	1 57
Oysters	10	1 70	.....	.....	3	50	13	2 20
Fresh milk	8,561	145 91	2,705	43 74	21,194	367 55	32,460	557 20
Cheese, full milk	103	11 27	.....	.....	417	43 05	520	54 32
Butter	857	173 31	164	27 97	3,417	591 52	4,438	792 80
Eggs	116	17 20	.....	.....	296	50 45	412	67 65
Vegetable albuminoids:								
White flour	4,096	95 48	3,760	59 34	1,795	39 41	9,651	194 23
Graham flour	20	60	.....	.....	60	1 65	80	2 25
Buckwheat flour	50	1 00	.....	.....	.....	.....	50	1 00
Oatmeal	586	13 79	791	17 37	2,766	61 07	4,143	92 23
Cracked wheat	60	1 50	.....	.....	480	9 60	540	11 10
Wheaten bread	3,228	62 33	30,244	520 75	43,963	1.042 11	77,435	1,625 19
Graham bread	358	9 31	1,408	21 12	40	90	1,806	31 33
Soda crackers	200	15 20	.....	.....	94	10 35	294	25 55
Pearled barley	37	1 49	448	11 03	647	19 10	1,132	31 62
Beans	103	2 35	420	9 45	630	12 77	1,153	24 57
Pease	.....	.....	623	10 52	480	10 55	1,103	21 07
Starchy foods:								
Corn meal	74	1 62	605	15 15	345	8 10	1,024	24 87
Rice	116	4 87	564	21 85	1,048	41 82	1,728	68 54
Potatoes	7,963	55 92	13,552	113 41	38,340	316 60	59,855	485 93
Turnips	657	5 51	1,904	11 25	1,890	11 60	4,451	28 36
Beets	283	2 21	1,285	9 30	1,646	10 00	3,214	21 51
Carrots	107	98	1,774	10 93	6,715	33 00	8,596	44 91
Parsnips	148	94	545	4 37	2,520	28 90	3,213	34 21
Cabbage	278	4 72	2,558	37 00	4,807	41 30	7,643	83 02
Other vegetables	123	1 23	1,036	14 79	5,176	44 10	6,335	60 02
Apples	3,723	50 59	.....	.....	2,590	34 80	6,313	85 39
Other green fruits	53	1 50	.....	.....	70	2 25	123	3 75
Preserved fruits	480	43 40	6	36	2,588	225 20	3,074	268 96
Starch	11	1 17	.....	.....	42	7 63	53	8 80
Sugar	1,402	94 60	706	40 48	4,273	272 05	6,381	407 13
Molasses	363	16 20	1,434	57 43	1,617	80 15	3,414	153 78
Miscellaneous:								
Tea	120	49 39	190	48 10	689	284 96	999	382 45
Coffee	69	19 42	90	12 71	547	108 29	706	140 42
Condiments	.....	15 80	.....	11 61	.....	50 92	.....	78 33
Summary by classes of foods.								
Animal albuminoids	16,112	862 12	16,532	830 17	54,397	2,724 19	87,040	4,416 48
Vegetable albuminoids	8,738	203 03	37,694	649 58	50,955	1,207 51	97,387	2,060 12
Starchy foods	15,781	285 46	25,969	336 32	73,667	1,157 50	115,417	1,779 18
Miscellaneous	189	84 61	280	72 42	1,236	444 17	1,705	601 20
Totals	40,820	1,435 22	80,475	1,888 49	180,255	5,533 37	301,549	8,856 98
		cts.		cts.		cts.		cts.
Average daily ration	4.60	16.17	4.16	9.77	4.09	12.58	4.17	12.25

FOOD CONSUMPTION.

TABLE No. XLIV.—Showing for Schools and Colleges, Provincial Prisons and Lunatic Asylums the total quantity and value of food consumed, the average quantity and value of a daily ration, etc., for the fourteen days ending February 19, 1886.

	No. of Rations.	Quantity.	Value.	Average daily ration.		Albuminoid ration.	
				Quantity.	Value.	Quantity.	Value.
Schools and Colleges.		lbs.	$ c.	lbs.	cts.	lbs.	cts.
No. 1 — Animal albuminoids	3,884	7,052	343 52	1.8156	8.8444	2.8226	11.1593
Vegetable albuminoids		3,911	89 91	1.0069	2.3148		
Starchy foods		6,994	102 35	1.8007	2.6351		
Miscellaneous		60	24 64	.0154	0.6343		
No. 2. — Animal albuminoids	2,312	4,088	202 11	1.7681	8.7417	2.7409	10.4697
Vegetable albuminoids		2,249	39 95	0.9727	1.7279		
Starchy foods		4,131	88 50	1.7867	3.8278		
Miscellaneous		56	23 85	0.0242	1.0315		
No. 3. — Animal albuminoids	1,134	2,160	132 11	1.9047	11.6499	2.9911	14.2178
Vegetable albuminoids		1,232	29 12	1.0864	2.5679		
Starchy foods		2,007	35 37	1.7619	3.1190		
Miscellaneous		34	16 32	0.0299	1.4391		
No. 4. — Animal albuminoids	887	1,214	93 77	1.3686	10.5715	2.1296	13.3517
Vegetable albuminoids		675	24 66	0.7609	2.7801		
Starchy foods		1,295	25 59	1.4599	2.8850		
Miscellaneous		17	7 90	0.0191	0.8895		
No. 5. — Animal albuminoids	661	1,598	90 61	2.4175	13.7080	3.4326	16.6414
Vegetable albuminoids		671	19 39	1.0151	2.9334		
Starchy foods		1,354	33 65	2.0484	5.0909		
Miscellaneous		22	11 90	0.0332	1.8003		
Provincial Prisons.							
No. 1. — Animal albuminoids	7,953	6,160	55 40	0.7745	0.6965	2.9385	4.0309
Vegetable albuminoids		17,210	265 18	2.1639	3.3343		
Starchy foods		12,650	167 69	1.5906	2.1085		
Miscellaneous		126	38 81	0.0158	0.4879		
No. 2. — Animal albuminoids	5,742	5,540	316 75	0.9648	5.5163	3.0686	9.7557
Vegetable albuminoids		12,080	243 43	2.1038	4.2394		
Starchy foods		6,800	85 79	1.1842	1.4940		
Miscellaneous		88	21 63	0.0153	0.3766		
No. 3. — Animal albuminoids	2,443	1,758	90 49	0.7196	3.7040	2.2709	6.1281
Vegetable albuminoids		3,790	59 22	1.5513	2.4240		
Starchy foods		3,077	52 00	1.2595	2.1285		
Miscellaneous		34	8 16	0.0139	0.3340		
No. 4. — Animal albuminoids	3,190	3,074	107 06	0.9636	3.3561	2.4100	5.9188
Vegetable albuminoids		4,614	81 75	1.4463	2.5626		
Starchy foods		3,442	30 84	1.0789	0.9667		
Miscellaneous		32	3 82	0.0100	0.1197		
Lunatic Asylums.							
No. 1. — Animal albuminoids	14,335	17,211	742 42	1.2006	5.1790	2.2546	7.5337
Vegetable albuminoids		15,110	337 54	1.0540	2.3546		
Starchy foods		31,615	393 78	2.2054	2.7469		
Miscellaneous		456	135 16	0.0325	0.9428		
No. 2. — Animal albuminoids	9,114	11,338	690 00	1.2440	7.5707	2.4344	10.5209
Vegetable albuminoids		10,850	268 88	1.1904	2.9501		
Starchy foods		11,942	248 01	1.3102	2.7211		
Miscellaneous		252	109 88	0.0276	1.2056		
N . 3. — Animal albuminoids	10,917	13,322	699 65	1.2202	6.4088	2.5003	9.6044
Vegetable albuminoids		13,974	348 87	1.2800	3.1956		
Starchy foods		16,444	299 22	1.5062	2.7408		
Miscellaneous		263	98 63	0.0240	0.9034		
No. 4. — Animal albuminoids	9,707	12,526	592 12	1.2904	6.0999	2.4257	8.6982
Vegetable albuminoids		11,021	252 22	1.1343	2.5983		
Starchy foods		13,666	216 49	1.4078	2.2302		
Miscellaneous		265	100 50	0.0273	1.0353		

FOOD CONSUMPTION.

TABLE No. XLV. -Showing the quantity and value of food supplies and the average cost of a ration of food, in certain families in Toronto for the fourteen days ending February 19th, 1886.

FAMILY RETURNS: DESCRIPTION.

Consecutive number.	No. of meals supplied to persons—				Total No. of meals.	No. of rations.	No. of rations per day.	Yearly earnings.
	Under 5 years.	5 to 10 years.	10 to 15 years.	Over 15 years.				
1	84	.....	....	126	210	70	5	$2,500
2	39	38	....	117	194	65	4	$2,000
3	126	.....	126	168	420	140	10	$ 730
Totals.....	249	38	126	411	824	275	19	$5,230

Quantity and Value for each Family and Totals.

Food Materials.	No. 1.		No. 2.		No. 3.		Totals.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	lbs.	$ c.	lbs.	$ c.	lbs.	$ c.	lbs.	$ c.
Animal albuminoids:								
Beef	28	3 70	7	0 78	18	2 08	53	6 56
Mutton	.....	.....	11	1 72	8	0 72	19	2 44
Pork, fresh.....	.....	.....	4	0 48	6	0 72	10	1 20
Veal	.....	.....	.....	.....	8	1 00	8	1 00
Corned beef	.....	.....	5	0 55	9	0 72	14	1 27
Bacon.....	.....	.....	1	0 15	2	0 28	3	0 43
Fowl, chicken	4	0 40	10	1 00	.....	.....	14	1 40
Fish, fresh	.....	.....	.....	.....	5	0 40	5	0 40
" canned	2	0 20	2	0 20	.....	.....	4	0 40
Oysters	.....	.....	2	0 27	2	0 35	4	0 62
Fresh milk	87	2 45	70	1 96	140	3 36	297	7 77
Cheese, full milk.....	¼	0 04	1	0 19	.....	.....	1¼	0 23
Butter	8	2 75	5	1 52	10	2 40	23	6 67
Eggs.....	3	0 55	4	0 75	2	0 25	9	1 55
Vegetable albuminoids:								
White flour.....	3	0 10	7	0 21	7	0 25	17	0 56
Graham flour.....	5	0 18	.....	.....	.....	.....	5	0 18
Oatmeal.....	2	0 08	4	0 16	4	0 13	10	0 37
Wheaten bread.....	40	1 10	26	0 78	84	2 10	150	3 98
Soda crackers	2	0 20	6	0 80	1	0 10	9	1 10

TABLE No. XLV.—FOOD CONSUMPTION.—*Continued.*

Food Materials.	No. 1.		No. 2.		No. 3.		Total.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	lbs.	$ c.	lbs.	$ c.	lbs.	$ c.	lbs.	$ c.
Starchy foods:								
Cornmeal			½	0 02			½	0 02
Rice					1	0 05	1	0 05
Potatoes	30	0 23	15	0 19	30	0 30	75	0 72
Turnips					15	0 10	15	0 10
Carrots	15	0 10					15	0 10
Parsnips					15	0 10	15	0 10
Cabbage	4	0 05			18	0 15	22	0 20
Other vegetables	25	0 25					25	0 25
Apples	30	0 50	15	0 25	15	0 20	60	0 95
Other green fruits	8	0 10					8	0 10
Preserved fruits	5	1 00	3	0 50	3	0 60	11	2 10
Starch	1	0 10			1	0 10	2	0 20
Sugar	7	0 50	6	0 42	14	1 00	27	1 92
Molasses	1	0 05					1	0 05
Miscellaneous:								
Tea	1½	1 20	2	1 60	1	0 60	4½	3 40
Coffee					1	0 35	1	0 35
Condiments		0 25		0 50		0 35		1 10
Summary by classes of foods.								
Animal albuminoids	132	10 09	122	9 57	210	12 28	464	31 94
Vegetable albuminoids	52	1 66	43	1 95	96	2 58	191	6 19
Starchy foods	126	2 88	40	1 38	112	2 60	278	6 86
Miscellaneous	2	1 45	2	2 10	2	1 30	6	4 85
Totals	312	16 08	207	15 00	420	18 76	939	49 84
Average of daily rations	4.46	0 23	3.20	0 23	3.00	13 40	3.42	0 18

IMPORTS AND EXPORTS OF GRAIN AND BREADSTUFFS.

TABLE No. XLVI.—Statement of Imports and Exports of Wheat, Corn, Barley, Oats, Pease, Flour, etc., for the Dominion of Canada, for the ten years ending June 30, 1885.

		Total imports.	Total exports.	Exports not produce of Canada.	Net surplus or deficit (-).	Value of total exports.
						$
1876.						
Wheat	Bush.	5,838,156	9,248,390	3,177,997	3,410,234	10,416,636
Indian Corn	"	3,635,528	2,047,040	2,037,741	-1,588,488	1,447,907
Oats	"	628,205	2,644,233	.....	2,016,028	1,139,261
Pease	"	10,208	2,399,608	30,949	2,464,854	1,971,789
Beans	"		75,454	.....		65,266
Barley	"	34,099	10,168,176	.....	10,091,651	7,429,604
Rye and other grain	"	42,426				
Flour of Wheat and Rye	Bbls.	376,114	419,936	4,432	43,822	2,205,467
Meal of all kinds	"	153,690	64,756	795	-88,934	290,701
1877.						
Wheat	Bush.	4,589,051	3,559,095	1,167,940	-1,029,956	4,102,210
Indian Corn	"	8,260,079	4,083,174	4,081,662	-4,176,905	2,583,173
Barley	"	369,801	6,587,180	241,483	6,217,379	4,721,455
Rye	"	65,414	95,065	.....	29,651	65,163
Oats	"	1,697,968	3,996,156	1,025,872	2,298,188	1,658,079
Pease	"	8,669	1,753,439	7,522	1,864,870	1,509,214
Beans	"		120,100	.....		119,737
Other grain	"	635	3,928	.....	3,293	3,018
Flour of Wheat	Bbls.	549,063	276,439	7,834	-274,593	1,525,230
" Rye	"	1,969				
Indian Meal	"	294,342	1,499	291	-292,843	5,175
Oatmeal	"	4,012	33,727	10	29,715	151,386
Other meal	"	4,260	283	.....	-3,977	988
1878.						
Wheat	Bush.	5,635,411	8,509,243	4,115,708	2,873,832	11,631,128
Indian Corn	"	7,387,507	3,987,600	3,986,945	-3,399,907	2,678,289
Barley	"	302,147	7,543,342	275,943	7,241,195	4,488,634
Rye	"	146,823	452,420	36,595	305,597	279,169
Oats	"	2,162,292	2,430,841	90,779	268,549	1,046,285
Pease	"	9,589	2,520,049	5	2,481,759	1,984,115
Beans	"		71,299	137		76,300
Other grain	"	730	5,920	27	5,190	6,008
Flour of Wheat	Bbls.	314,520	479,245	2,814	162,842	2,757,688
" Rye	"	1,883				
Indian Meal	"	226,850	1,389	278	-225,461	4,609
Oatmeal	"	3,005	174,511	.....	171,506	754,257
Other meal	"	1,615	1,103	.....	-512	4,200
1879.						
Wheat	Bush.	4,768,733	9,767,555	3,156,831	4,998,822	9,748,795
Indian Corn	"	7,617,421	5,429,359	5,427,530	-2,188,062	2,754,585
Barley	"	43,233	5,393,212	9,290	5,349,979	4,793,887
Rye	"	74,238	641,694	770	567,456	364,479
Oats	"	2,070,535	2,514,598	141,308	444,063	843,619
Pease	"	2,343	2,715,252	257	2,712,909	2,056,079
Beans	"	7,187	59,175	24	51,988	53,207
Other grain	"	37	5,439	.....	5,402	2,399
Flour of Wheat	Bbls.	315,044	580,776	5,829	265,143	2,603,118
" Rye	"	589				
Indian Meal	"	221,488	1,200	368	-220,288	3,407
Oatmeal	"	5,478	102,116	2,057	96,638	409,151
Other meal	"	1,067	1,663	20	596	4,625
1880.						
Wheat	Bush.	7,521,594	12,169,493	7,078,988	4,647,899	13,549,876
Indian Corn	"	6,377,387	4,547,942	4,546,373	-1,829,445	2,184,212
Barley	"	15,635	7,241,379	1,817	7,225,744	4,482,585
Rye	"	18,636	970,463	12,643	951,827	712,223
Oats	"	176,926	4,742,028	24,988	4,565,102	1,715,495
Pease	"	2,979	3,819,412	22	3,816,433	2,977,545
Beans	"	6,466	75,214	23	68,748	76,986
Other grain	"	61	15,488	.....	15,427	6,246
Flour of Wheat	Bbls.	113,035	561,484	16,893	448,319	3,019,717
" Rye	"	130				
Indian Meal	"	172,446	1,367	894	-171,079	3,307
Oatmeal	"	1,248	111,393	10,472	110,145	477,397
Other meal	"	207	1,842	380	1,636	4,693

TABLE No. XLVI.—IMPORTS AND EXPORTS OF GRAIN AND BREADSTUFFS.—*Con.*

		Total imports.	Total exports.	Exports and produce of Canada.	Net surplus or deficit (-).	Value of total exports.
						$
1881.						
Wheat	Bush.	7,339,689	9,092,279	6,568,606	1,752,590	9,636,505
Indian Corn	"	7,454,892	5,257,604	5,256,320	-2,197,288	2,615,744
Barley	"	16,933	8,811,278	.....	8,794,345	6,261,383
Rye	"	225	870,296	.....	870,071	783,840
Oats	"	84,934	2,926,532	.....	2,841,598	1,191,873
Pease	"	3,787	4,245,590	.....	4,241,803	3,478,003
Beans	"	6,504	108,997	74	102,493	117,832
Other grain	"	91	2,887	.....	2,796	1,457
Flour of Wheat	Bbls.	236,433	501,455	61,727	265,022	2,469,900
" Rye	"	94	100	100	6	220
Indian Meal	"	178,194	1,517	1,262	-176,677	3,997
Oatmeal	"	959	54,480	655	53,521	236,191
Other meal	"	240	544	.....	304	1,742
1882.						
Wheat	Bush.	2,931,220	6,433,533	2,588,498	3,502,313	8,153,610
Indian Corn	"	3,918,031	2,229,900	2,229,851	-1,688,131	1,353,738
Barley	"	9,491	11,588,446	.....	11,578,955	10,114,623
Rye	"	1,447	1,281,678	.....	1,280,231	1,191,119
Oats	"	73,022	4,148,865	1,911	4,075,843	1,729,300
Pease	"	3,641	3,521,496	.....	3,517,855	3,191,874
Beans	"	12,709	95,643	27	82,934	197,687
Other grain	"	105	187,760	.....	187,655	185,598
Flour of Wheat	Bbls.	200,716	508,120	38,381	307,262	2,941,740
" Rye	"	142				
Indian Meal	"	133,505	736	706	-132,769	2,473
Oatmeal	"	820	49,642	2	48,822	207,710
Other meal	"	165	4,142	855	3,977	13,074
1883.						
Wheat	Bush.	4,954,174	10,733,535	4,866,077	5,779,361	11,703,374
Indian Corn	"	2,425,668	819,605	819,353	-1,606,063	586,020
Barley	"	16,465	8,817,216	.....	8,800,751	6,293,233
Rye	"	45,377	1,093,112	45,303	1,047,735	744,613
Oats	"	222,685	1,024,053	.....	801,368	460,821
Pease	"	2,353	2,339,287	.....	2,336,934	2,161,708
Beans	"	23,732	142,429	7	118,697	212,530
Other grain	"	80	106,018	.....	105,938	59,435
Flour of Wheat	Bbls.	301,455	526,340	37,294	227,885	2,703,078
" Rye	"	96	.....	.....	.....	.....
Indian Meal	"	130,545	279	231	-130,266	1,077
Oatmeal	"	1,182	67,016	965	65,834	280,572
Other meal	"	271	4,433	271	4,162	11,809
1884.						
Wheat	Bush.	3,604,442	3,021,188	2,275,662	-583,254	3,359,192
Indian Corn	"	5,996,412	3,806,474	3,794,550	-2,189,938	2,485,846
Barley	"	28,093	7,780,262	.....	7,752,169	5,104,642
Rye	"	30,459	902,484	29,515	872,025	595,692
Oats	"	242,615	1,431,744	85,024	1,189,129	534,196
Pease	"	1,695	2,255,591	54,494	2,253,896	2,059,160
Beans	"	15,496	55,924	5	40,428	92,721
Other grain	"	68	90,576	.....	90,508	59,907
Flour of Wheat	Bbls.	565,277	284,504	87,115	-280,773	1,440,675
" Rye	"	99	.....	.....	-99	.....
Indian Meal	"	129,239	367	316	-128,872	1,080
Oatmeal	"	285,050	60,656	4,755	-224,394	247,079
Other meal	"	244	12,357	1,050	12,113	33,258
1885.						
Wheat	Bush.	3,128,143	5,423,805	3,082,849	2,295,662	5,061,005
Indian Corn	"	3,508,529	2,007,674	1,988,789	-1,500,855	1,293,862
Barley	"	14,717	9,067,395	.....	9,052,678	5,503,833
Rye	"	17,108	304,341	17,045	287,233	191,163
Oats	"	314,922	2,367,605	8,603	2,052,683	896,739
Pease	"	2,739	2,698,778	625	2,696,039	2,078,613
Beans	"	15,099	193,620	18	178,521	185,897
Other grain	"	26	55,455	.....	55,429	53,126
Flour of Wheat	Bbls.	565,562	161,054	37,277	-404,508	716,739
" Rye	"	93	.....	.....	-93	.....
Indian Meal	"	122,449	483	369	-121,966	1,469
Oatmeal	"	395,677	67,108	1,508	-328,569	255,239
Other meal	"	214	7,408	.....	7,194	19,377

EXPORTS OF THE DOMINION.

TABLE No. XLVII.—Statement of the quantities and values of Exports the growth, produce and manufacture of the Dominion of Canada for the ten fiscal years ending June 30, 1885; also, the average prices of articles for each year, computed from the declared values.

ARTICLES.		1876.	1877.	1878.	1879.	1880.	1881.	1882.	1883.	1884.	1885.
ANIMALS AND THEIR PR'DUCE:											
Horses	No.	4,299	8,306	14,179	16,629	21,393	21,993	20,920	13,019	11,595	11,978
	$	442,338	779,222	1,273,728	1,376,794	1,880,379	2,094,037	2,326,637	1,633,291	1,617,829	1,554,629
	$	102.90	93.82	89.83	82.79	87.90	95.21	111.21	125.45	139.52	129.79
Horned cattle	No.	25,357	22,656	29,925	46,569	54,944	62,277	62,106	66,396	89,263	143,003
	$	601,148	715,750	1,152,334	2,096,696	2,764,437	3,464,871	3,256,330	3,898,028	5,681,082	7,377,777
	$	23.71	31.59	38.50	45.02	50.31	55.64	52.43	58.70	63.64	51.59
Swine	No.	3,886	2,063	3,201	6,803	6,229	2,819	3,263	3,858	3,883	1,652
	$	14,541	11,811	23,255	60,142	41,281	11,841	10,875	12,281	14,243	7,283
	$	3.74	5.73	7.26	8.84	6.63	4.20	3.33	3.18	3.67	4.40
Sheep	No.	141,187	209,899	242,989	308,093	398,726	354,155	311,669	308,474	304,403	335,043
	$	507,538	583,020	699,337	988,045	1,422,830	1,372,127	1,228,957	1,388,056	1,544,605	1,261,071
	$	3.59	2.78	2.88	3.21	3.57	3.87	3.94	4.50	5.07	3.76
Poultry, etc.	$	74,317	48,303	67,448	90,880	141,034	133,963	149,804	161,229	192,908	175,475
Bones	cwt.	4,052	25,022	33,017	45,681	61,969	60,194	63,135	53,546	57,528	59,203
	$	2,827	22,866	22,448	44,425	48,415	55,686	54,068	56,131	47,527	53,345
	$	.70	.91	.68	.97	.78	.92	.86	1.05	.83	.90
Butter	lbs.	12,250,066	14,691,789	13,006,626	14,307,977	18,535,362	17,649,491	15,161,839	8,106,447	8,075,537	7,330,788
	$	2,540,894	3,073,409	2,382,237	2,101,897	3,058,069	3,573,034	2,936,156	1,705,817	1,612,481	1,430,905
	$	.21	.21	.18	.15	.16	.20	.19	.21	.20	.20
Cheese	lbs.	35,024,090	35,930,524	38,054,294	46,414,035	40,368,678	49,255,523	50,807,049	58,041,387	69,755,423	79,655,367
	$	3,751,268	3,748,575	3,997,521	3,790,300	3,893,366	5,510,443	5,500,868	6,451,870	7,251,989	8,265,240
	$	.11	.10	.11	.08	.10	.11	.11	.11	.10	.10
Lard	lbs.	637,555	539,826	265,347	312,443	498,680	209.679	135,169	51,203	214,772	63,559
	$	51,796	62,998	27,641	18,464	31,270	19,882	13,869	5,855	21,425	5,491
	$	.08	.12	.10	.06	.06	.09	.10	.11	.10	.09
Furs	$	1,779,038	1,322,757	1,326,601	1,191,356	1,035,625	1,983,096	1,278,340	1,087,523	1,119,756	1,626,826
Hides, skins, horns & hoofs	$	486,117	477,096	377,104	387,592	709,163	432,498	375,565	460,983	435,898	601,111
Honey	lbs.	2,175	915	1,179	398	6,070	8,915	2,438	875	1,079	3,278
	$	314	106	310	51	1,857	1,163	316	107	178	440
	$	.14	.12	.26	.13	.30	.13	.13	.12	.16	.13
Eggs	doz.	3,880,813	5,025,953	5,262,920	5,440,823	6,452,580	9,090,135	10,499,082	13,451,410	11,490,855	11,542,703
	$	508,425	534,891	646,574	574,093	740,665	1,103,812	1,643,709	2,256,586	1,960,197	1,830,632
	$	.13	.10	.12	.10	.11	.12	.16	.17	.17	.16
Meats, viz.:											
Bacon	lbs.	8,059,300	14,090,600	4,519,419	3,977,276	8,616,739	9,785,089	9,758,027	3,736,724	7,546,807	7,189,260
	$	839,105	1,252,255	367,319	242,851	467,790	717,589	1,071,394	436,973	731,590	630,614
	$	.10	.09	.08	.06	.05	.07	.11	.12	.10	.09
Hams	lbs.	.....	.....	1,168,805	669,878	955,603	569,598	615,947	517,636	571,163	962,827
	$	.....	.....	110,613	45,764	66,203	40,745	64,367	62,285	62,212	86,641
	$	.....	.....	.09	.07	.07	.07	.10	.12	.11	.09
Beef	lbs.	1,573,200	4,840,000	5,134,244	2,050,672	692,842	1,372,809	749,742	628,728	423,915	542,209
	$	140,108	375,974	451,876	148,587	41,948	83,738	49,798	40,722	27,469	34,517
	$	.09	.08	.09	.07	.06	.06	.07	.06	.06	.06
Mutton	lbs.	.....	.....	411,218	300,915	100,888	173,798	334,548	397,280	176,835	330,376
	$	.....	.....	35,722	17,583	5,424	8,814	18,732	22,826	10,990	18,731
	$	.....	.....	.09	.06	.05	.05	.06	.06	.06	.06

TABLE No. XLVII.—EXPORTS OF THE DOMINION.—*Continued.*

ARTICLES.		1876.	1877.	1878.	1879.	1880.	1881.	1882.	1883.	1884.	1885.
Meats—Con.											
Pork	lbs.	2,620,000	2,657,400	913,770	498,290	1,281,391	1,578,168	1,225,408	806,843	630,970	555,436
	$	242,785	220,222	59,306	25,383	67,280	113,694	93,621	69,969	44,518	35,269
	$	.09	.08	.06	.05	.05	.07	.08	.09	.07	.06
Tongues	lbs.	.....	.....	122,542	41,823	61,774	68,916	72,316	32,596	8,106	131,498
	$	1,777	4,205	11,350	2,661	4,385	4,765	6,094	1,801	521	10,878
	$	.....	.....	.09	.06	.07	.07	.08	.06	.06	.08
Venison	lbs.	.....	.....	3,115	480	3,300	7,352	8,340	11,525	60	.....
	$	1,163	328	175	49	149	364	431	648	5	.....
	$	.....	.....	.06	.10	.05	.05	.05	.06	.08	.....
Preserved n.e.s.	lbs.	.....	1,478,570	1,107,062	670,216	1,171,184	1,040,251	1,286,005	1,770,774	1,793,249	499,187
	$	96,915	180,795	199,438	86,100	124,591	103,289	124,888	180,080	160,212	37,495
	$	.....	.12	.18	.13	.11	.10	.10	.10	.09	.08
Sheep pelts	No.	126,765	83,418	89,758	124,562	136,564	48,574	43,853	84,799	101,987	73,324
	$	49,524	38,236	27,458	28,924	51,431	13,201	10,664	18,157	28,740	20,515
	$	.39	.46	.31	.23	.38	.27	.24	.21	.28	.28
Tallow	lbs.	882,571	401,985	290,965	1,054,627	818,474	855,327	942	3,864	136,521	62,624
	$	53,574	30,117	20,455	72,065	50,451	66,173	61	710	8,929	4,034
	$	.06	.07	.07	.07	.06	.08	.06	.18	.07	.06
Wool	lbs.	2,907,229	2,476,484	2,445,893	3,013,587	3,619,181	1,404,123	1,053,305	1,375,572	1,501,031	989,925
	$	933,601	698,974	707,319	691,894	920,923	409,683	246,657	280,530	310,060	196,178
	$	.32	.28	.29	.23	.25	.29	.23	.20	.21	.20
Other articles	$	495,456	38,707	32,288	18,908	38,611	41,711	56,461	51,885	60,744	72,007
AGRICULTURAL PRODUCTS:											
Bran	cwt.	9,252	11,592	19,784	40,568	89,113	90,130	56,459	24,561	52,072	62,881
	$	6,712	10,891	14,260	31,843	52,738	52,241	39,590	21,806	46,637	46,677
	$	.73	.93	.72	.78	.60	.58	.70	.89	.90	.74
Flax	lbs.	2,463,200	2,619,500	1,336,700	586,400	1,013,700	628,600	650,900	1,163,400	531,200	706,000
	$	165,125	182,979	98,971	46,194	95,502	67,874	85,537	108,220	73,779	59,904
	$	.07	.07	.07	.08	.09	.11	.13	.09	.10	.08
Fruit, green	bls.	84,107	77,888	53,213	87,101	146,548	334,538	212,526	158,018	51,019	238,936
	$	170,005	194,942	149,333	157,618	347,166	645,658	540,464	499,185	173,048	635,240
	$	2.02	2.50	2.81	1.81	2.37	1.93	2.54	3.16	3.39	2.66
Grain and Products of, viz.:											
Wheat	bsh.	6,070,393	2,393,155	4,393,535	6,610,724	5,090,505	2,523,673	3,845,035	5,867,458	745,526	2,340,956
	$	6,749,298	2,742,383	5,376,195	6,274,640	5,942,042	2,593,820	5,180,335	5,881,488	812,923	1,966,287
	$	1.11	1.15	1.20	.95	1.17	1.03	1.35	1.00	1.09	.84
Indian Corn	bsh.	9,299	1,512	655	1,829	1,569	1,284	49	252	11,924	18,885
	$	8,471	885	517	999	965	594	61	293	8,941	11,399
	$	.91	.52	.79	.55	.62	.46	1.24	1.17	.75	.60
Barley	bsh.	10,168,176	6,345,697	7,267,399	5,383,922	7,239,562	8,811,278	11,588,446	8,817,216	7,780,262	9,067,395
	$	7,429,604	4,566,951	4,315,739	4,789,487	4,481,685	6,261,383	10,114,623	6,293,238	5,104,642	5,503,833
	$	.73	.72	.60	.89	.62	.71	.87	.71	.66	61
Rye	bsh.	.....	95,065	415,825	640,924	957,820	870,296	1,281,678	1,047,809	872,969	287,296
	$	.....	65,163	251,669	364,017	702,701	783,840	1,191,119	712,900	565,663	179,873
	$	.....	.69	.61	.57	.73	.90	.93	.68	.65	.63
Oats	bsh.	2,644,233	2,970,284	2,304,062	2,373,290	4,717,040	2,926,532	4,146,954	1,024,053	1,346,720	2,359,002
	$	1,139,261	1,247,160	959,985	804,325	1,707,326	1,191,873	1,728,774	460,821	501,712	893,515
	$	.43	.42	.42	.34	.36	.41	.42	.45	.37	.38

TABLE No. XLVII.—EXPORTS OF THE DOMINION.—*Continued.*

ARTICLES.		1876.	1877.	1878.	1879.	1880.	1881.	1882.	1883.	1884.	1885.
Grain.—Con.											
Pease	bsh.	2,368,659	1,745,917	2,420,044	2,714,995	3,819,390	4,245,490	3,521,493	2,339,287	2,201,097	2,698,153
	$	1,939,589	1,494,914	1,984,101	2,055,872	2,977,516	3,478,003	3,191,869	2,161,708	2,009,275	2,077,762
	$	.82	.86	.82	.76	.78	.82	.91	.92	.91	.77
Beans	bsh.	75,454	120,100	71,162	59,151	75,191	108,923	95,616	142,422	55,919	193,602
	$	65,266	119,737	76,013	53,162	76,948	117,708	197,602	212,514	92,702	185,869
	$	.86	1.00	1.07	.90	1.02	1.08	2.07	1.49	1.66	.96
Other grains	bsh.	.....	3,928	5,893	5,439	15,488	2,887	187,760	106,018	90,576	55,455
	$	.....	3,018	5,794	2,399	6,246	1,457	185,598	59,435	59,007	33,126
	$	.....	.76	.98	.44	.40	.50	.99	.56	.65	.59
Flour of wheat	bls.	415,504	268,605	476,431	574,947	544,591	439,728	469,739	489,046	197,389	123,777
	$	2,178,389	1,485,438	2,739,466	2,572,675	2,930,955	2,173,108	2,748,988	2,515,955	1,025,995	556,530
	$	5.24	5.53	5.75	4.47	5.38	4.94	5.85	5.14	5.20	4.50
Indian-meal	bls.	.....	1,208	1,111	832	473	255	30	48	51	114
	$	.....	4,097	3,721	2,317	1,050	784	125	202	126	371
	$	.....	3.39	3.35	2.78	2.22	3.07	4.16	4.20	2.47	3.25
Oatmeal	bls.	63,961	33,717	174,511	100,059	100,921	58,825	49,640	66,051	55,901	65,600
	$	287,741	151.351	754,257	401,370	438,020	234,150	207,698	276,574	230,294	250,319
	$	4.50	4.49	4.32	4.01	4.34	3.98	4.18	4.19	4.12	3.82
Other meal	bls.	.....	283	1,103	1,643	1.462	544	3,287	4,162	11,307	7,408
	$	.....	988	4,200	4,578	3.777	1,742	10,609	10,816	30,203	19,377
	$	.....	3.49	3.80	2.79	2.58	3.20	3.23	2.60	2.67	2.62
Hay	tons	38,520	29,575	17,269	11,704	64,444	168,381	90,647	93,740	108,461	134,939
	$	321,533	254,763	163,628	105,643	484,967	1,813,208	915,691	902,105	913,057	1,270,525
	$	9.59	8.61	9.48	9.03	7.53	10.77	10.10	9.62	8.42	9.42
Hops	lbs.	205,333	82,758	208,928	102,499	388,330	10,500	201,767	177,142	117,266	103,438
	$	41,723	19,010	19,474	7,535	45,120	2,712	41,780	89,859	16,402	17,292
	$	.20	.23	.09	.07	.12	.26	.20	.51	.14	.17
Malt	bsh.	153,926	307.552	614,199	505,929	1,056,294	708,771	1,171,580	1,329,958	235,959	374,961
	$	144,336	276,083	439,792	423,343	843,570	649,857	1,108,943	1,136,700	178,330	280,137
	$	.93	.90	.72	.84	.80	.92	.95	.85	.76	.75
Maple sugar	lbs.	10,508	26,052	7,207	1,888	119,332	172,285	277,782	169,662	391,348	11,704
	$	1,296	2,525	782	192	7,985	14,616	20,864	12,358	25,018	1,016
	$	.12	.10	.10	.10	.07	.08	.08	.07	.06	.09
Potatoes	bsh.	231,451	3,113,820	1,062,229	2,654,422	1,423,415	2,295,307	3,800,162	2,424,979	753,435	660,715
	$	85,326	1,394,784	361,134	1,261,389	459,668	830,218	2,268,769	1,048,954	231,716	234,812
	$	.37	.45	.34	.48	.32	.36	.60	.43	.31	.35
Seeds, other	$	319,668	285,684	203,719	190,879	591,065	204,476	913,215	207,052	80,464	116,267
Tobacco leaf	lbs.	93,328	283,817	27,584	39,644	10,150	6,351	66,824	32,249	118	.....
	$	7,179	11,872	1,624	3,384	766	2,332	6,337	6,469	25	.....
	$	.08	.04	.06	.09	.08	.37	.09	.20	.21	.....
Vegetables	$	21,705	65,772	26,016	25,023	40,400	67.745	195,435	91,887	92,280	75,062
Other articles	$	57,438	107,986	58,364	49,580	56,150	80,128	141,686	107,985	125,604	103,102
MAN'FACT'RES:											
Agricultural implements	$	.....	.....	86,001	79,911	59,128	31,269	46,142	16,766	17,252	22,640
Books, maps & pamphlets	$	20,529	20,087	23,313	19,519	30,961	31,321	23,223	45,551	105,486	155,511
Biscuits	lbs.	829,600	.....	637,600	655,700	598,100	398,100	491,900	443,700	392,700	417,600
	$	30,604	20,776	29,986	24,298	20,631	17,228	22,095	19,326	18,031	18,936
	$	.04	.....	.05	04	.03	.04	.04	.04	.05	.05

TABLE No. XLVII.—EXPORTS OF THE DOMINION.—*Continued.*

ARTICLES		1876.	1877.	1878.	1879.	1880.	1881.	1882.	1883.	1884.	1885.
MANUFACT'RES —*Continued.*											
Candles	lbs.	41,912	55,855	137,012	43,149	41,834	6,152	186	4,447	6,463	200
	$	4,312	6,544	14,790	4,899	4,574	836	29	685	1,109	47
	$	.10	.12	.11	.11	.11	.13	.16	.15	.17	.23
Carriages, etc.	No.	405	214	626	612	867	789	426	293	318	285
	$	17,945	14,432	58,409	43,984	40,480	46,442	32,056	21,714	21,756	17,765
	$	44.30	67.44	93.30	71.87	46.69	58.35	75.25	74.11	68.41	62.32
Clothing (wearing apparel)	$	....	22,516	24,754	23,053	8,742	9,952	6,846	10,057	15,521	15,055
Cordage, etc.	$	... .	18,189	21,076	23,279	14,084	12,031	11,506	11,355	14,593	44,279
Cottons	$	6,980	5,679	2,371	1,418	4,170	1,540	1,372	11,565	10,931	37,191
Extract of hemlock bark	bls	28,725	15,823	19,442	10,602	18,641	22,034	29,375	40,323	27,946	15,766
	$	379,258	161,637	187,840	101,897	171,808	190,068	234,908	305,418	361,156	203,211
	$	13.20	10.22	9.66	9.61	9.22	8.63	8.00	7.57	12.92	12.89
Furs	$	3,846	4,933	6,197	10,643	4,669	3,223	2,746	3,476	5,369	9,443
Glass and glassware	$	3,227	1,404	2,189	708	6,070	2,441	1,920	1,823	1,825	1,135
Grindstones	$	25,755	30,564	42,812	46,301	45,006	35,755	45,477	51,726	40,492	31,082
Gypsum (ground)	$	32,063	19,851	22,527	2,542	8,925	13,388	11,041	8,950	12,321	22,207
Hats & caps	$	.....	2,166	572	339	400	108	1,639	914	655	736
India rubber	$	5,923	3,447	2,081	1,430	2,897	870	897	3,614	4,208	4,512
Iron:											
Stoves	No.	... .	.. .. ..	.....	382	113	240	53	64	89	63
	$	.....	.....	.....	5,270	1,552	3,309	1,035	798	1,554	878
	$	.. ..	.....	.....	13.80	13.73	13.79	19.53	12.47	17.46	13.94
Cast'ngs, n.e.s	$	.....	7,537	12,124	13.555	20.677	14,387	7,895	6,699	11,752	6,458
Pig	tons	11,356	3,646	.....	68	2,846	11	65	14	3	.....
	$	196,928	35,472	10,012	805	72,023	179	1,000	317	66	.....
	$	17.34	9.73	.....	11.84	25.30	16.27	15.38	22.64	22.00	.... ..
Scrap	$	.....	.....	37,836	37,498	205,134	191,210	120,493	46,482	26,576	3,797
All other and hardware	$	95,283	68,733	102,983	81,995	92,588	84,713	209,548	319,217	217,389	99,268
Junk & Oakum	lbs.	.....	775,900	639,000	1,688,300	2,133,200	1,847,700	1,039,800	1,373,500	1,462,900	1,320,400
	$	.....	17,787	17,528	32,287	34,939	35,177	30,846	34,963	32,574	32,408
	$	.....	.02	.03	.02	.02	.02	.03	.03	.02	.02
Leather:											
Sole & upper	$	952,578	510,144	563,221	263,826	408,708	416,902	426,403	271,140	296,186	419,749
Boots & shoes	prs.	.....	158,505	263,310	195,256	159,676	95,828	116,437	90.872	101,501	.....
	$	83,279	196,422	236,345	193,553	165,147	101,727	117,868	96,815	109,430	70,199
	$	.....	1.24	.90	.99	1.03	1.06	1.01	1.07	1.08	.....
Harness and saddlery	$	2,840	2,239	3,405	2,823	3,314	4,746	2,149	4,346	2,752	2,827
Other manufactures of	$	60,229	11,250	18,806	5,149	8,357	4,986	5,918	121,982	110,374	20,605
Lime	$	19,023	50,314	8,301	4,299	8,047	4,691	7,579	11,112	10,402	11,005

TABLE No. XLVII.—EXPORTS OF THE DOMINION.—*Continued.*

ARTICLES.	1876.	1877.	1878.	1879.	1880.	1881.	1882.	1883.	1884.	1885.
MANUFACT'RES —*Continued.*										
Liquors, viz.:										
Ale, beer & cider. gals	64,424	70,987	81,486	54,399	53,219	56,802	42,450	18,641	19,305	5,103
$	19,607	28,326	32,287	19,500	18,952	20,824	19,088	7,657	7,021	2,086
$	.30	.40	.40	.36	.36	.37	.45	.41	.36	.40
Whisk'y gals	4,088	132,686	1,135	21,291	4,181	2,513	7,056	14,515	8,054	10,630
$	6,879	52,293	1,041	10,637	3,280	2,598	5,591	12,486	6,668	10,311
$	1.68	.39	.92	.50	.78	1.03	.79	.86	.83	.97
Other spirits. gals	43,450	89,266	168,302	83,833	12,629	5,558	5,363	2,366	1,302	77
$	43,480	102,802	136,006	69,069	12,212	3,931	3,297	2,722	1,379	165
$	1.00	1.15	.81	.82	.97	.71	.61	1.15	1.06	2.14
Machinery, n.e.s	60,308	96,265	77,482	54,205	47,193	40,201	77,432	74,366	82,491	86,163
Musical Instruments, viz.:										
Organs. No.			189	224	293	306	965	459	1,114	2,007
$			17,834	20,141	28,855	27,612	84,295	40,372	85,475	135,212
$			94.63	90.00	98.48	90.24	87.35	87.96	76.73	67.37
Pianos. No.			11	20	31	17	16	24	41	35
$			2,775	3,955	7,995	3,480	2,865	6,768	11,215	8,830
$			252.27	197.70	258.00	204.70	179.06	282.00	273.53	252.28
All others...$	11,163	20,851	1,466	79	470	133	3,874	1,629	1,399	463
Oil cake cwt.	27,057	37,809	50,866	67,910	12,155	18,790	16,217	8,701	4,310	12,305
$	47,766	64,984	69,762	44,572	21,819	39,474	38,288	20,855	6,947	23,127
$	1.03	1.72	1.37	.66	1.80	2.10	2.36	2.40	1.61	1.88
Rags..... $	13,607	11,407	14,611	26,834	49,294	49,044	35,800	30,820	12,799	11,634
Sewing m'chines No.	31,124	26,686	30,429	26,796	27,603	22,463	22,563	9,147	8,093	9,418
$	305,749	260,115	273,258	218,601	201,545	165,452	150,643	69,933	95,326	69,235
$	9.82	9.75	8.98	8.16	7.30	7.37	6.68	7.65	11.78	7.35
Ships sold to other countr's tons	64,134	46,329	35,039	19,318	16,208	16,808	16,161	23,896	17,368	13,177
$	2,129,270	1,576,244	1,218,145	529,824	464,327	348,018	402,311	506,538	416,756	246,466
$	34.13	34.02	34.77	27.43	28.65	20.71	24.89	21.20	24.00	18.70
Soap... lbs.	86,117	105,213	166,787	158,001	90,196	115,591	125,203	108,268	156,828	138,307
$	5,520	6,585	8,629	6,627	4,498	4,370	5,020	3,957	6,855	5,419
$	.06	.06	.05	.04	.05	.04	.04	.04	.04	.04
Starch.. lbs.	70	122,200	1,794	16,715	643,057	880,092	93,679	824,049	2,675,160	1,157,597
$	14	2,796	194	863	31,650	32,691	4,621	25,360	69,097	25,795
$	.20	.02	.11	.05	.05	.04	.05	.03	.03	.02
Steel & manufactures of. $		78,144	32,618	34,673	78,451	143,656	96,266	43,812	30,781	30,323
Stone & marble, wrought. $	30,470	11,729	13,154	6,515	6,811	13,802	22,790	18,469	18,469	17,235
Tobaccos, viz.:										
Cigars & cigarett's lbs.			722	400	13,575	36,288	950	122,942	553	342
$			1,217	593	4,657	6,842	1,112	25,696	1,067	691
$			1.69	1.48	.34	.19	1.17	.21	1.93	2.02
Stems & cuttings lbs.			85,662	69,484	205,796	37,201	421,844	301,513	526,880	370,949
$			15,941	5,394	7,701	1,425	12,750	10,207	14,974	8,079
$			.19	.08	.04	.04	.03	.03	.03	.02
All other n.e.s.. lbs.	462,194	456,389	316,001	344,499	189,802	255,313	272,927	228,028	84,484	115,846
$	77,457	80,644	63,852	50,851	28,141	36,536	53,289	38,134	14,883	25,952
$	.17	.18	.20	.15	.15	.14	.20	.17	.18	.22

TABLE No. XLVII.—EXPORTS OF THE DOMINION.—*Continued.*

ARTICLES.	1876.	1877.	1878.	1879.	1880.	1881.	1882.	1883.	1884.	1885.
MANUFACTRE'S.—*Continued.*										
Vinegar { gals	246	5,947	1,186	317	670	680	1,737	527	82	335
Vinegar { $	73	1,325	335	86	181	266	498	148	26	83
Vinegar { $	.30	.22	.28	.27	.27	.30	.29	.28	.32	.25
Wood, viz.:										
Household furniture.. $	87,340	142,356	79,890	95,988	118,961	100,387	106,854	133,932	131,705	169,115
Doors, sashes & blinds.. $	10,459	12,583	36,777	20,025	22,742	22,280	39,997	22,147	59,645	46,678
Other manufactures of. $	98,387	142,515	192,526	184,805	268,035	291,657	354,043	384,796	430,345	470,206
Woollens.... $	45,249	38,652	33,897	35,125	32,687	21,681	25,752	31,296	41,060	55,733
Other articles $	154,801	142,683	268,579	236,038	339,129	440,236	410,491	564,309	580,892	481,556

SUMMARY OF EXPORTS OF THE DOMINION FOR EIGHTEEN FISCAL YEARS, BY VALUES.

YEAR.	Produce of the Mine.	Produce of the Fisheries.	Produce of the Forest.	Animals and their Produce.	Agricultural Products.	Manufactures.	Miscellaneous Articles.	Totals.
	$	$	$	$	$	$	$	$
1868.....	1,276,129	3,357,510	18,742,625	6,893,167	12,871,055	2,100,411	302,280	45,543,177
1869.....	1,941,485	3,242,710	20,423,882	8,769,407	12,182,702	2,412,559	350,559	49,323,304
1870.....	2,192,541	3,608,549	21,533,300	12,138,161	13,676,619	2,560,370	371,652	56,081,192
1871.....	2,841,124	3,994,275	23,063,148	12,582,925	9,853,146	2,428,875	387,554	55,151,047
1872.....	3,389,984	4,348,508	24,245,500	12,416,613	13,378,562	2,708,203	513,066	61,000,436
1873.....	5,853,860	4,779,277	29,298,917	14,243,017	14,995,340	3,609,903	465,292	73,245,606
1874.....	3,760,835	5,292,368	27,237,779	14,679,169	19,590,142	2,946,655	419,800	73,926,748
1875.....	3,643,398	5,380,527	25,070,410	12,700,507	17,258,358	3,028,512	409,181	67,490,893
1876.....	3,731,827	5,500,989	20,333,230	13,614,569	21,139,665	5,148,201	393,368	69,861,849
1877.....	3,644,040	5,874,360	23,010,249	14,220,617	14,689,376	4,105,422	320,816	65,864,880
1878.....	2,816,347	6,853,975	19,511,575	14,019,857	18,008,754	4,127,755	401,871	65,740,134
1879.....	3,082,900	6,928,871	13,261,459	14,100,604	19,628,464	2,700,281	386,999	60,089,578
1880.....	2,877,351	6,579,656	16,854,507	17,607,577	22,294,328	3,242,617	640,155	70,096,191
1881.....	2,767,829	6,867,715	24,960,012	21,360,219	21,269,527	3,075,095	622,182	80,922,579
1882.....	3,013,573	7,682,079	23,991,055	20,518,662	31,035,712	3,329,598	535,935	90,106,614
1883.....	2,970,886	8,809,118	25,370,726	20,284,343	22,818,519	3,503,229	528,895	84,285,707
1884.....	3,247,092	8,591,654	25,811,157	22,946,108	12,397,843	3,577,535	560,690	77,132 079
1885.....	3,639,537	7,960,001	20,989,708	25,337,104	14,518,293	3,181,501	557,374	76,183,518

SCHOOLS.

TABLE No. XLVIII.—Statistics of the High, Public and Separate

Year.	Population between 5 and 16 years.	High Schools.								Public					
		Number of schools.	Number of pupils on roll.	Average attendance.	Number of teachers employed.	Total salaries paid.	Average salary paid.	Total expenditure for school purposes.	Expenditure per capita of Average attendance.	Number of schools.	Number of pupils on roll.	Average attendance.	Number of teachers employed.		
													Male.	Female.	Total.
						$	$	$	$ c.						
1842..	141,143	25	.....	...	.....	.....	.....	.....	.....	1,721	65,978	.....	.....	.....	...
1843*	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1844..	183,539	25	.....	.....	.....	.....	.....	.....	.....	2,610	96,756	.....	.....	.....	.....
1845..	202,913	31	.....	.....	.....	.....	.....	.....	.....	2,736	110,002	.....	.....	.....	2,860
1846..	204,580	32	.....	.....	.....	.....	.....	.....	.....	2,589	101,912	.....	.....	.....	2,925
1847..	230,975	32	1,000	.....	.....	.....	.....	.....	.....	2,727	124,829	.....	2,365	663	3,028
1848..	241,102	33	1,115	.....	.....	.....	.....	.....	.....	2,800	130,739	.....	2,507	670	3,177
1849..	253,364	39	1,120	.....	.....	.....	.....	.....	.....	2,871	138,465	.....	2,505	704	3,209
1850..	259,258	57	2,070	.....	.....	.....	.....	.....	.....	2,959	151,891	52,630	2,597	779	3,376
1851..	258,607	54	2,191	.....	.....	.....	.....	.....	.....	2,985	168,159	58,053	2,551	826	3,377
1852..	262,755	60	2,343	.....	.....	.....	.....	.....	.....	2,992	179,587	61,862	2,541	847	3,388
1853..	268,957	64	3,221	.....	.....	.....	.....	.....	.....	3,093	194,736	67,112	2,501	938	3,439
1854..	277,922	64	4,287	.....	92	43,490	473	47,033	.....	3,200	204,168	71,679	2,508	1,031	3,539
1855..	297,623	65	3,726	.....	95	46,255	487	54,140	.....	3,284	222,979	78,043	2,531	977	3,508
1856..	311,316	61	3,386	.....	90	47,659	529	63,023	.....	3,391	243,935	85,377	2,562	1,032	3,594
1857..	324,888	72	4,973	.....	107	57,552	538	76,707	.....	3,631	262,673	92,936	2,727	1,244	3,971
1858..	360,578	75	4,459	.....	112	52,940	473	61,662	.....	3,772	283,692	98,491	2,901	1,183	4,084
1859..	362,085	81	4,381	.....	121	61,564	509	74,850	.....	3,848	288,598	104,653	3,037	1,050	4,087
1860..	373,589	88	4,546	.....	127	64,005	504	77,557	.....	3,854	301,104	113,348	3,019	1,100	4,119
1861..	384,980	86	4,765	.....	123	71,034	577	81,108	.....	3,910	316,287	119,711	2,960	1,219	4,179
1862..	403,302	91	4,982	.....	131	73,211	559	86,244	.....	3,995	329,033	128,714	3,028	1,216	4,244
1863..	412,367	95	5,352	.....	141	76,121	540	85,910	.....	4,013	344,949	131,505	3,016	1,317	4,333
1864..	424,565	95	5,589	.....	139	75,854	546	85,816	.....	4,077	354,330	141,343	2,928	1,507	4,435
1865..	426,757	104	5,754	.....	149	81,562	547	94,241	.....	4,151	365,552	148,248	2,849	1,672	4,521
1866..	431,815	104	5,719	.....	151	87,055	576	113,887	.....	4,222	372,320	149,528	2,855	1,727	4,582
1867..	447,726	102	5,696	2,712	159	94,820	596	124,181	45 79	4,261	382,719	155,368	2,767	1,913	4,680
1868..	464,315	101	5,649	2,542	161	95,848	595	117,647	46 28	4,318	399,305	160,673	2,683	2,077	4,760
1869..	470,400	101	6,608	2,924	165	97,009	588	114,502	39 16	4,359	411,746	168,722	2,681	2,145	4,826
1870..	483,966	101	7,351	3,432	172	105,153	611	137,566	40 08	4,403	421,866	171,603	2,657	2,272	4,929
1871..	489,615	102	7,490	3,745	174	113,862	654	152,880	40 82	4,438	425,126	177,923	2,557	2,510	5,067
1872..	495,756	104	7,968	4,040	239	141,812	593	210,005	51 98	4,490	433,256	178,117	2,539	2,683	5,222
1873..	504,869	108	8,437	4,460	252	165,358	656	234,215	52 51	4,562	438,911	181,067	2,490	2,883	5,373
1874..	511,603	108	7,871	4,256	248	179,946	726	286,593	67 34	4,592	441,261	181,048	2,509	2,949	5,458
1875..	501,083	108	8,342	4,499	253	184,752	730	300,741	66 85	4,678	451,568	186,800	2,556	3,182	5,738
1876..	502,250	104	8,541	4,789	266	195,906	736	304,948	63 68	4,875	465,243	199,704	2,685	3,198	5,883
1877 ..	494,804	104	9,229	5,287	280	211,607	756	343,710	65 00	4,955	465,908	204,635	2,915	3,219	6,134
1878..	492,360	104	10,574	6,054	298	223,010	748	396,010	65 41	4,913	463,405	211,416	2,956	3,184	6,140
1879..	494,424	104	12,136	7,099	320	241,097	763	400,788	56 46	4,932	462,233	206,369	3,052	3,198	6,250
1880..	489,924	104	12,910	7,393	335	247,894	740	413,930	55 99	4,941	457,734	207,334	3,164	3,239	6,4[illegible]
1881..	484,224	104	12,136	7,424	333	257,218	772	345,850	46 59	5,043	451,449	202,252	3,257	3,291	6[illegible]
1882..	483,817	104	12,348	6,728	332	253,864	765	343,720	51 09	5,010	445,364	200,602	2,964	3,503	[illegible]
1883..	478,791	104	11,843	5,454	347	266,317	767	348,946	54 07	5,058	438,192	201,856	2,732	3,782	[illegible]
1884..	471,287	106	12,737	7,302	358	282,776	790	385,426	52 78	5,109	439,454	207,301	2,694	3,964	6

* No report in consequenc

SCHOOLS.

Schools of Ontario for the forty-three years 1842-1884.

Schools.				Separate Schools.										
							Number of teachers employed.							
Total salaries paid teachers.	Average salary paid.	Total expenditure for school purposes.	Expenditure per capita of average attendance.	Number of schools.	Number of pupils on roll.	Average attendance.	Male.	Female.	Totals.	Total salaries paid teachers.	Average salary paid.	Total expenditure for school purposes.	Expenditure per capita of average attendance.	Year.
$	$	$	$											
166,000	....	.....	.....	.....	.....	.....	.....	.....	.....	.....	....	.....	.....	1842
.....	....	.....	.....	.....	.....	.....	.....	.....	.....	.....	....	.....	.....	*1843
206,856	....	.....	.....	.....	.....	.....	.....	.....	.....	.....	....	.....	.....	1844
286,056	100	.....	.....	.....	.....	.....	.....	.....	.....	.....	....	.....	.....	1845
271,624	93	.....	.....	.....	.....	.....	.....	.....	.....	.....	....	.....	.....	1846
310,396	102	.....	.....	.....	.....	.....	.....	.....	.....	.....	....	.....	.....	1847
344,276	108	.....	.....	.....	.....	.....	.....	.....	.....	.....	....	.....	.....	1848
353,912	110	.....	.....	.....	.....	.....	.....	.....	.....	.....	....	.....	.....	1849
353,716	105	410,472	7 80	.....	.....	.....	.....	.....	.....	.....	....	.....	.....	1850
391,308	116	468,644	8 07	16	.....	.....	.....	.....	.....	.....	....	.....	.....	1851
428,948	127	529,314	8 56	18	.....	.....	.....	.....	.....	.....	....	.....	.....	1852
489,764	142	617,836	9 20	32	.....	.....	.....	.....	.....	.....	....	.....	.....	1853
578,868	163	754,340	10 52	44	.....	.....	.....	.....	.....	.....	....	.....	.....	1854
670,988	191	885,959	11 35	41	4,885	2,076	37	20	57	9,120	160	13,313	6 41	1855
767,340	214	1,057,636	12 39	81	7,210	3,064	60	35	95	12,340	130	20,472	6 68	1856
841,489	212	1,179,790	12 59	100	9,694	4,320	60	52	112	18,743	167	32,368	7 49	1857
760,885	186	1,014,929	10 30	94	9,991	4,601	64	54	118	16,731	142	28,206	6 13	1858
836,322	205	1,079,483	10 31	105	12,994	5,208	78	70	148	23,003	155	30,563	5 87	1859
872,386	212	1,128,414	9 95	115	14,708	5,663	81	81	162	23,205	143	31,360	5 54	1860
893,585	214	1,160,477	9 70	109	13,631	6,222	71	86	157	24,528	156	30,941	4 97	1861
934,588	220	1,200,614	9 33	109	14,700	6,370	87	75	162	25,188	155	31,379	4 93	1862
962,114	222	1,220,638	9 28	120	15,859	6,531	78	93	171	25,441	149	33,809	5 18	1863
965,976	218	1,243,168	8 80	147	17,365	8,226	83	107	190	30,980	163	42,150	5 12	1864
1,007,099	223	1,309,659	8 83	152	18,101	8,518	81	119	200	33,953	170	46,220	5 43	1865
1,034,134	226	1,342,194	8 98	157	18,575	8,337	70	137	207	32,746	158	45,039	5 40	1866
1,058,686	226	1,424,560	9 17	161	18,924	8,606	82	128	210	34,830	166	48,628	5 65	1867
1,107,698	233	1,532,983	9 54	162	20,594	9,305	94	142	236	38,846	165	55,452	5 96	1868
1,136,537	235	1,568,147	9 29	165	20,684	9,331	94	134	228	38,629	169	56,750	6 08	1869
1,180,942	240	1,653,561	9 64	163	20,652	10,035	96	140	236	41,739	177	58,500	5 83	1870
1,249,083	247	1,733,476	9 74	160	21,200	10,371	84	155	239	42,393	177	69,818	6 73	1871
1,325,770	254	2,138,554	12 01	171	21,406	10,584	87	167	254	45,824	180	68,810	6 50	1872
1,470,817	274	2,521,256	13 92	170	22,073	11,123	91	178	269	49,306	183	83,270	7 49	1873
1,596,606	292	2,776,968	15 34	166	22,786	11,850	92	186	278	51,144	184	88,364	7 46	1874
1,700,074	296	2,902,453	15 54	165	22,673	11,774	89	191	280	58,026	207	90,627	7 70	1875
1,775,300	302	2,899,973	14 52	167	25,294	12,779	95	207	302	63,021	209	106,483	8 33	1876
1,867,899	305	2,853,223	13 94	185	24,952	12,549	105	229	334	70,200	210	120,266	9 58	1877
1,940,906	318	2,768,788	13 10	177	25,610	13,172	104	229	333	70,301	211	120,559	9 15	1878
1,997,657	320	2,710,253	13 13	191	24,779	13,073	101	245	346	75,165	217	122,831	9 40	1879
935,895	318	2,693,589	12 99	196	25,311	12,734	100	244	344	77,285	225	128,463	10 09	1880
30,159	310	2,720,547	13 45	195	24,819	13,012	105	269	374	75,860	203	123,724	9 51	1881
0,353	319	2,683,254	13 38	193	26,148	13,574	98	292	390	84,095	216	154,340	11 37	1882
8,485	325	2,954,818	14 64	194	26,177	13,705	97	300	397	91,702	231	153,611	11 21	1883
0,311	330	3,104,385	14 98	207	27,463	14,560	95	332	427	95,716	224	176,477	12 12	1884

nge in the School Law.

SCHOOLS.

TABLE No. XLIX.—Summary Statistics of the High, Public and Separate Schools of Ontario for the thirty-one years, 1854-1884.

Years.	Population between the ages of 5 and 16 years.	High, Public and Separate Schools.						Superannuation Fund.				
		Schools in operation.	Pupils enrolled of all ages.	*Average attendance.	Teachers employed.	Salaries paid teachers.	Total expenditure.	No. on List.			Total payments.	Average payments.
								Male.	Female.	Total.		
						$	$				$	$
1854	277,922	3,308	208,455	71,679	3,631	622,358	801,373	40	.....	40	3,344	84
1855	297,623	3,390	231,590	80,119	3,660	726,363	953,412	78	2	80	5,618	70
1856	311,316	3,533	254,531	88,441	3,779	827,339	1,141,131	122	6	128	6,535	51
1857	324,888	3,803	276,440	97,250	4,190	917,784	1,288,865	119	6	125	5,112	41
1858	360,578	3,941	298,142	103,092	4,314	830,556	1,104,797	147	8	155	2,663	17
1859	362,085	4,034	505,973	109,861	4,356	920,899	1,184,896	145	9	154	3,922	25
1860	373,589	4,057	320,358	119,011	4,408	959,593	1,237,331	143	8	151	4,085	27
1861	384,980	4,105	334,683	125,933	4,459	989,147	1,272,523	152	9	161	4,081	25
1862	403,302	4,195	348,715	135,084	4,537	1,032,087	1,318,237	154	10	164	5,438	33
1863	412,367	4,228	366,160	138,036	4,645	1,063,676	1,340,357	156	12	168	3,245	19
1864	424,565	4,319	377,284	149,569	4,764	1,072,810	1,371,134	146	12	158	3,611	23
1865	426,757	4,407	389,407	156,766	4,870	1,122,614	1,450,120	143	11	154	3,997	26
1866	431,815	4,483	396,614	157,865	4,940	1,153,935	1,501,120	134	11	145	3,726	26
1867	447,726	4,524	407,339	166,686	5,049	1,188,336	1,597,369	135	12	147	4,162	28
1868	464,315	4,581	425,548	172,520	5,157	1,242,392	1,706,085	131	12	143	5,957	42
1869	470,400	4,625	439,038	180,977	5,219	1,272,175	1,739,399	119	12	131	6,332	48
1870	483,966	4,667	449,869	185,070	5,337	1,327,834	1,849,627	118	13	131	6,376	48
1871	489,615	4,700	453,816	192,039	5,480	1,405,338	1,956,174	112	12	124	6,016	49
1872	495,756	4,765	462,630	192,741	5,715	1,513,406	2,417,369	128	13	141	11,942	85
1873	504,869	4,840	469,421	196,650	5,894	1,685,481	2,838,741	139	14	153	19,097	125
1874	511,603	4,866	471,918	197,154	5,984	1,827,696	3,151,925	171	18	189	22,910	121
1875	501,083	4,951	482,583	203,073	6,271	1,942,852	3,293,821	205	24	229	26,509	116
1876	502,250	5,146	499,078	217,272	6,451	2,034,227	3,311,404	241	25	266	31,769	119
1877	494,804	5,244	500,089	222,471	6,748	2,149,706	3,317,199	269	24	293	35,484	121
1878	492,360	5,194	490,589	230,642	6,771	2,234,217	3,285,357	307	32	339	41,319	122
1879	494,424	5,227	499,148	226,541	6,916	2,313,919	3,233,872	328	32	360	43,774	122
1880	489,924	5,241	495,955	227,461	7,082	2,361,074	3,235,986	353	38	391	38,229	123
1881	484,224	5,342	489,404	222,688	7,255	2,363,237	3,190,121	361	28	399	49,129	123
1882	483,817	5,307	483,860	220,904	7,189	2,398,312	3,181,314	381	41	422	51,000	121
1883	478,791	5,356	476,212	222,015	7,258	2,476,504	3,457,375	373	49	422	51,500	122
1884	471,287	5,422	479,654	229,163	7,443	2,578,803	3,666,288	.....	.....	443	54,234	122

* Average attendance for years 1854-66 does not include High Schools.

PUBLIC LANDS AND TIMBER LIMITS.

TABLE No. L.—Statistics of the Area and Value of Public Lands and Timber Limits sold in Ontario in the nineteen years 1867-1885.

Years.	Area of Lands Sold.							Timber Limits.	
	Crown Lands.	Clergy Lands.	Common School Lands.	Grammar School Lands.	Total Public Lands Sold.	Value.	Average Value per Acre.	Area under License.	Accrued Dues, Rents, Bonuses, etc.
	Acres.	Acres.	Acres.	Acres.	Acres.	$	$ c.	Sq. Miles.	$
1867	11,592	4,030	1,461	609	17,692	30,215	1 70	6,155	107,649
1868	23,299	9,528	4,322	2,835	39,984	60,649	1 52	11,584	190,238
1869	33,275	11,312	6,183	2,447	53,217	143,754	2 70	12,066	508,562
1870	37,538	10,162	3,256	1,263	52,219	69,791	1 34	12,005	379,965
1871	78,037	8,535	3,702	1,998	92,272	158,566	1 72	12,534	570,882
1872	113,623	16,100	2,068	3,906	135,697	185,071	1 36	12,358	659,156
1873	98,715	33,448	4,908	13,244	150,315	215,376	1 43	14,555	568,725
1874	96,995	20,532	3,583	11,652	132,762	180,874	1 36	16,259	425,505
1875	51,952	6,434	1,945	4,622	64,953	79,960	1 08	15,769	377,504
1876	51,387	7,255	2,039	3,511	64,192	83,005	1 11	14,981	362,398
1877	35,506	5,287	3,551	2,327	46,671	59,340	1 28	16,132	409,340
1878	39,164	3,757	2,299	3,375	48,595	51,055	1 05	16,005	293,310
1879	25,071	2,488	1,463	1,279	30,301	35,219	1 13	16,084	342,894
1880	30,722	1,977	1,002	1,389	35,090	31,955	0 91	15,940	413,416
1881	88,543	7,126	1,292	1,295	98,256	64,508	0 66	15,612	537,934
1882	98,814	4,693	555	1,959	106,021	106,292	1 00	17,989	547,103
1883	69,357	3,233	448	863	73,901	65,446	0 89	16,886	480,490
1884	61,189	3,669	337	730	65,925	55,425	0 84	16,840	421,485
1885	99,919	1,270	66	1,572	102,827	92,093	0 90	17,215	657,298
Totals	1,144,698	160,836	44,480	60,876	1,410,890	1,768,594	1 25	.....	.....

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